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GUNSHOT WOUNDS.

BY W. R. HAGGER, M.R.C.V.S., ARMY VETERINARY DEPARTMENT.

THE term "Gunshot Wounds" is applied to all those injuries which result from the direct action of missiles discharged from some of the various kinds of guns and rifles.

As the features, progress, and ultimate issue of these injuries are considerably influenced by the nature of the agents concerned in producing them, it will be well to consider some of the leading qualities of those projectiles which, in modern warfare, are the direct causes of most of the gunshot wounds likely to engage our attention in the field, viz., bullets and shells.

Rifle Bullets.—The various kinds of rifle bullets are much too numerous to admit of a separate description of each being given in this short paper; but speaking of these projectiles generally, they may be described as small masses of hardened lead, cylindro-conoidal in shape, with an average individual weight of about 450 grains, and having a diameter of about half an inch.

Shells.—The shells mostly used with modern field cannon are those known as "common" and "shrapnell."

A common shell consists of a cylindro-conoidal case of iron adapted to enclose a quantity of gunpowder, which is designed to explode on impact. The effect of the explosion is to shatter the iron case into a number of pieces of various shapes and sizes, which are scattered in all directions with great force.

A shrapnell shell is precisely similar in external appearance to a common shell. It is filled partly with gunpowder and partly with a number of spherical bullets. The powder inside the shell has no effect in propelling the missile, but is merely sufficient to burst the iron case asunder, and this it is arranged to do by being ignited by a time-fuse after the shell has left the gun, and while it still possesses enormous horizontal velocity. The velocity being, as a matter of course, equally possessed by the bullets within the shell, they pursue their onward course with great speed.

Bullet Wounds.—The lesions produced by a bullet penetrating the body vary according to the speed of the missile. A wound of entrance is observed to be circular in shape, with inverted margin, and somewhat smaller than the missile which caused it. If the part struck happen to well clothed with muscles, and the bullet enters perpendicularly to the surface, while possessing a high rate of speed, it may pass out, leaving a straight canal of even calibre all the way through. But if the missile should enter obliquely, it will be either diverted inwards and penetrate to a depth proportionate to its speed, leaving a large, hollow, winding track; or, as more frequently happens, it will merely penetrate the skin, take a superficial course, and travel a considerable distance—sometimes several feet—without entering the muscles at all. When a bullet has passed out, the wound of exit is usually a little larger than that of entrance, while its margins are decidedly everted, and not unfrequently small pieces of subcutaneous tissue are to be seen protruding from it. These slight differences in the features of an opening of entrance and one of exit may appear unimportant, but that they are not so is illustrated by the following case, taken from several of a similar kind that have come under my own observation. A small Cape horse belonging to a volunteer corps that was serving in Zululand during the war, was shot whilst out on a reconnaissance. The bullet penetrated the skin about three inches below the withers on the near side; taking a backward direction, it crossed obliquely over the spine in the middle of the back; from here it passed along the loins, and made its exit about three inches above the tuberosity of the ischium. From the time this wound

was inflicted to the commencement of the inflammatory process there was nothing to indicate the course the bullet had taken, and, considering the situation of the two openings, it was only natural for the rider to be convinced in his own mind that his horse had been hit twice. But a careful examination of the two wounds in the skin led us to conclude that they had been caused by the same bullet—a diagnosis that was amply confirmed in less than twenty-four hours, by a swelling which appeared along the whole course the missile had taken. Thus the horse was spared the pain of having his wound probed and explored unnecessarily.

Shell Wounds.—A fragment of a shell inflicts a ghastly, open, lacerated wound, and occasionally tears away a piece of the tissues opposed to it. Shell wounds are generally superficial injuries, owing, no doubt, to the direction taken by the pieces when a shell bursts, being at a more or less acute angle with the part wounded.

Treatment of Gunshot Injuries.—In order to establish a thorough knowledge of the nature and extent of gunshot wounds, they should be examined before inflammation and its attendant swelling have supervened. Any lodged missiles should be searched for and removed with the bullet forceps, if possible. This operation, however, is by no means such an easy matter as a mere theoretical acquaintance with the task might lead one to suppose. In a very large proportion of cases the buried missile is tightly held by surrounding tissues, or it has penetrated to such a depth, leaving a tract so irregular, as to preclude all possibility of ever getting it within the grasp of the forceps. In such cases the best, quickest, and least painful manner of extracting the lodged missile is by incision. When this course has been determined on, the operator has to be guided in deciding where to begin the wound of incision by the situation of the foreign body and the nature of the intervening structures. If the missile be lying within a few inches of the wound of entrance, the best plan is to merely lay open the track. If, on the other hand, it should be lodged close to the surface, at a considerable distance from the wound of entrance, it is obvious that a second opening should be made opposite to the seat of lodgment.

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When circumstances are against the removal of a bullet, it may —indeed frequently does—become encysted, and remain for years, without causing its bearer any apparent inconvenience.

In respect to topical treatment, I have found that for these, as for most other kinds of wounds, antiseptic dressings are eminently superior to all other applications. Carbolic acid, in the form of carbolised oil, was extensively used in the infirmary at Ismailia, Egypt, where its antiseptic effects on large open wounds proved most advantageous. In addition to its antiseptic properties, carbolic acid is invaluable on active service for its deodorizing effects on the dreadful effluvia emitted by large sloughing wounds, such as are met with in the field, and thereby mitigating the intolerable and repulsive effects of flies and maggots. A solution of the chloride of lime is another very valuable agent in the treatment of these injuries, especially as an injection for deep unhealthy bullet wounds. Poultices and fomentations are, so far as my experience of gunshot injuries goes, not only useless, but decidedly objectionable. They soon become offensive, attract flies, and instead of being soothing, they irritate. Moreover, the materials for the manufacture of these remedies are not often obtainable in the field; and the time for their careful preparation and application can seldom be spared. Irrigation, employed at intervals of two or three hours, is sometimes beneficial when inflammatory action runs high, over a large surface.

It is scarcely necessary for me to mention that the thing most essentially necessary in the treatment of gunshot injuries, is unceasing attention to hygienic measures, not only as applied to the wounds themselves, but also to the cleanliness of the infirmary camp. Manure, with all pieces of lint, tow, or bandages used for wounds should be removed regularly two or three times a-day, and if possible covered over with earth.

Regional Distribution of Wounds.—In consequence of the target arc of the trunk being so much larger than that of any other part of an animal's body, wounds in this region usually predominate. Next in order of frequency are wounds of the head and fore extremities; while the hind extremities seem to suffer least.

Regional Fatality.—With the exception of penetrating wounds

of the cranium, the injuries most immediately fatal are wounds of the chest and abdomen. The instantaneous effect of a bullet penetrating either of these cavities, is to produce a tremendous shock to the nervous system. The horse trembles nervously, has a painfully anxious countenance; he stands as if fixed to the ground, and when made to move does so with a tottering gait; his respiration is laboured, and the circulation is feeble and agitated. He soon becomes pulseless, and finally drops and dies of syncope.

I have never seen a gunshot injury involving fracture of any of the large bones, but I am informed that they are attended by a similar state of nervous disturbance. They are, as a matter of course, always fatal.

Wounds of the feet are, I think, the most painful of all the injuries our patients can meet with in action. The density of the tissues of these parts has the effect of distorting a bullet so as to render its extraction with the forceps quite impossible. Inflammation of an erysipelatous nature supervenes, and if not put out of its misery, the patient rapidly succumbs to irritative fever of a most aggravated kind.

Lacerations involving tendinous and ligamentous tissues, as the flexors of a limb, are in most cases very obstinate injuries to treat. They degenerate into large gangrenous ulcers, which spread rapidly, discharging a fœtid ichorous pus. The local irritation is inordinate, the horse making frequent attempts to gnaw the part. They are best treated with antiseptic dressings.

TRAUMATIC PERICARDITIS IN A COW.

BY WILLIAM CAUDWELL, M.R.C.V.S., WORKSOP.

ON the 18th of April last, I was requested to attend a six-years'-old short-horn cow, which calved about the middle of February, at which time my client bought her. He informed me that her illness commenced two days previously. *Symptoms*:—pulse accelerated, slight elevation of internal temperature, appetite impaired, lactation diminished, rumination suspended, bowels torpid, urine normal. Gave a saline aperient—c. Ol. Lini. et Ammon. Carb.

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19th.—Pulse 100, strong and regular; temperature, 105° Fahr.; respiration quickened; respiratory murmur and cardiac sounds normal; no pain is evinced on percussing the chest, and she does not cough or grunt. The bowels have responded; her appetite is a little better, and she drinks freely of oatmeal gruel. Apply clothing to body, and nurse well.

20th to 23rd.—Pulse 110 to 120, strong and regular; tem. 104·8° to 106·4° on the 23rd; respirations about 25; extremities cold. Diagnosis: Pericarditis. Prognosis: very unfavourable Gave Tr. Aconite, Spt. Æth. Nit. et Liq. Ammon. Acet.; two and three times a day, and Potass. Nit. occasionally. Applied mustard liniment over the region of the heart.

24th.—Pulse, respiration, and temperature about the same; expiration abdominal; respiratory murmur normal in character, but increased in intensity; cardiac sounds muffled on the left side, with dulness on percussion opposite the heart on both sides of the chest; the heart-sounds are more audible on the right side, and a slight tinkling or splashing noise can be heard. The jugular veins are distended, and there is slight œdema of the dewlap. I usually find her lying down, but she rises without difficulty, and does not appear to suffer much pain.

25th.—Pulse 120, temp. 105·6°; respiration laboured; œdema more marked, appetite not so good; she is wasting rapidly, and I see no chance of recovery; but my client will not at present consent to have her slaughtered. Gave Potass. Nit. et Potass. Iodide.

26th.—Pulse 120, temp. 105°, appetite rather better. Gave Potass. Iodide.

27th.—Pulse 120, and feeble; temp. 105°; has not fed so well; jugulars greatly distended, and the œdema is increasing.

28th.—Pulse and temperature about the same; on auscultation slight splashing noise can be heard opposite the region of the heart, and there is dulness on percussion. She does not evince pain on pressing the intercostal spaces, neither does she cough or grunt. Gave Digitalis Fol. et Potass. Nit.

29th.—Pulse 120, small and feeble, but it has been regular from the commencement of the attack. Temp. 105·6°; respirations 26 per minute and more laboured; slight diarrhœa; her ears and

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horns have been cold throughout; the œdema of the dewlap and beneath the sternum is much greater, and she has not been observed to ruminate for some days. To-day the owner consented to have her killed.

Post-mortem Examination. — After removing the skin, a quantity of serosity escaped from the areolar tissue of the dewlap, and the abdominal cavity contained a quantity of straw-coloured serum of a faint odour; the liver was enlarged and the gall-bladder much distended. On opening the chest the pericardium was incised, and much serum escaped. A beautiful specimen of Pericarditis presented itself: the exudate upon the visceral pericardium was from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch in thickness, and was easily stripped off in layers; it was connected to that covering the parietal reflection by bands of lymph. I traced a perforation through the diaphragm and pericardium, to the outer surface of the upper part of the left cardiac ventricle. The muscular tissue of the heart was pale and watery-looking; its cavities were normal. The lungs were perfectly healthy. On examining the reticulum, a piece of galvanized iron wire, four inches long, was found protruding through its coats a few inches below the œsophagus. On laying the viscus open another piece was found, but it was shorter, fine, and twisted.

Remarks.—By experience, we know that the usual course which foreign bodies in the reticulum take is towards the heart (though exceptions to this rule do sometimes occur), and I think this can be partly explained by the anatomical conformation of this stomach. I can readily imagine that when the pointed extremity of a foreign body happens to be in one of the cells of the anterior face of the reticulum, at the moment the animal gets up or lies down, the immense weight of the rumen from behind may easily force the point through its coats and the contracted diaphragm towards the heart.

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FOREIGN BODY IN THE LIVER OF A BULL. PYÆMIA.

BY THE SAME.

On November the 2nd, 1881, my immediate attendance was requested upon a twenty-months'-old short-horn bull, the property of W. Jessop, Esq., of Forest Hill. On arriving at 1.15 p.m. the animal presented the following symptoms:—Pulse 84, great elevation of internal and external temperature, respirations about 60 per minute, and laboured expiration, attended with a grunt; a flow of frothy saliva from the mouth, visible mucous membranes injected, increased respiratory murmur, and pain evinced on pressing the intercostal spaces: before I arrived he had severe rigors. Treatment:—Gave a brisk cathartic, c. Spt. Æth. Nit. et Tr. Aconite, and left two doses of Spt. Æth. Nit. et Tr. Aconite, to be given at 3 and 4 p.m. Applied a stimulating liniment to chest.—7 p.m., symptoms about the same; repeated medicine and left two doses.

3rd, 7 a.m.—Symptoms about the same; I advised my client to have him destroyed, to which he readily consented.

Post-mortem Examination.—Adhesions existed between the reticulum and liver; the latter organ was the seat of a large abscess, containing fœtid pus and half a hair-pin two and a-half inches long. Both lungs were extensively diseased; their surfaces presented nodular elevations, and, on section, I found thrombi in some of the small branches of the pulmonary arteries, also hæmorrhagic infarction and pyæmic abscesses; the anterior lobes were most free from disease, but all portions of the lungs were more or less involved. A number of small tubercles were also apparent. The costal pleura showed slight traces of inflammation. Spleen and heart appeared normal; the kidneys were not examined.

Conclusions.—It would appear that a portion of the contents of the hepatic abscess had gained entrance into the systemic veins, and, becoming arrested in the pulmonary capillaries, gave rise to pyæmic Pneumonia.

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NEW EMBRYOTOMY KNIFE.

BY R. R. COLE, M.R.C.V.S., HINCKLEY.

THE annexed woodcut represents a new form of embryotomy knife, and its advantages are—1st. It can be effectually used with the hand and arm in a straight position, whereas with the ordinary slide knife, the wrist must be somewhat bent in order to bring the cutting edge to bear; this, in a constricted passage,

is always difficult and sometimes well-nigh impossible. It is particularly useful in making the longitudinal incision in the skin, previous to the removal of a fore limb.

2nd. The *perfect safety*, as, should the animal struggle or suddenly drop, the instant the operator leaves off using it the cutting edge disappears.

It is manufactured by Messrs. Arnold and Sons, of London.

SWINE FEVER.

BY W. ALSTON EDGAR, M.R.C.V.S., DARTFORD, KENT.

(*Continued from page* 331.)

Semiology.—This usually draws the attention of the attendant and veterinarian to the animals, when some or all of the following symptoms will be observed: severe rigors when driven up from the straw; impaired appetite or complete anorexia; occasional vomition; cold extremities and ears, the latter pendent; surface of body intensely hot; fæces relaxed, or diarrhœa, the fluid of a brownish yellow hue, perhaps blood-stained, or the alvine excretions may be hard and coated with blood and mucus; great pain on pressure to abdomen; a painful suppressed cough exists when the pneumonic or laryngeal form is developed; quick, difficult respiration, together with nasal and lachrymal

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catarrh, which aggregates around the nostrils and eyes; the former is sometimes frothy, containing blood. In acute cases the animals may be plethoric, but in the more chronic form a marasmoid condition exists, associated with quick, weak pulse; great lassitude, a rolling gait, partial or complete paralysis, an enlargement of inguinal and submaxillary lymphatics. In a small per-centage of cases cerebral symptoms are manifest. The temperature is, except in very mild cases, very high. I have noted 108·6°, generally 104° to 107°. The highest noted by Professor Axe is 106·8°, that by Dr. Osler 110° in two cases in several 109° and 108°. The temperature is, however, no especial aid in establishing the existence of an outbreak; but in the subsequent daily examinations it is most useful in enabling us to detect the invasive period at its very onset, and to get the animals further isolated or slaughtered. The changes in the skin constitute one of the leading features of the malady.

These, however, may be entirely absent, as is evident in following different observers; but much has, I believe, been passed over in the black pig with coarse bristles that would have been noted in the white animal. These changes are fairly regular, and usually commence from the fifth to the eighth or ninth day of infection. I think the seventh is about the mean in most recorded experiments. The early form may be a general efflorescence, or, as in most cases, petechiæ appear, first on the protected parts, viz., inside of the thighs, axilla under the ears, and rapidly extending to all parts of body. The general redness, where this has been the commencement, soon gives place to circumscribed hyperæmic areas; the spots vary in diameter from one-quarter to three-quarters of an inch. If pressed upon at this stage, the spot blanches, but immediately on the removal of pressure assumes its original hue. In some animals the skin lesions are arrested at this stage, and the typical form is not represented; but where the hyperæmia continues well defined, inflammatory tissue changes commence. (I believe the period between the various stages is as regular as any other condition in the disease; but I have been unable at present to mark the special time, as all my observations have been made in ordinary outbreaks, under the control of the local

authority.) The epidermis is raised, and a serous exudation takes place under the epithelium; in a given time this is changed to an opaque, caseous-like fluid (if removed with a scalpel a blood-red equivalent area is exposed). Up to this time the papulæ are surrounded by a hyperæmic zone; again a period, and a reddish-brown crust commences to form in the centre o the vesicle, which may or may not extend to its margin. As this crust thickens and extends, the opaque fluid is hidden: if the animal lives, a *well-marked cicatrix is formed under the crust*, which generally becomes black on its surface, from the filth in which the animal lies. When the hair is very thick and the skin black these crusts are more readily felt than seen, except where a careful examination is made. In some outbreaks the cutaneous lesions assume a confluent condition, in which many small areas coalesce, and form a large necrotic patch, sometimes four or five inches in diameter; severe sloughing of the integument, ears, etc., then takes place.

Symptoms.—In some cases the cutaneous form is intense, and the enteric extremely modified, in the same animal. I have observed the severe dermic form of malady in from sixty to seventy per cent. of cases, and its Varioloid nature has made a strong impression upon me, to which I shall presently revert. Professor Axe is the only worker at the malady who has given a detailed description of the true skin form. Dr. Voyles, in thirty *post-mortem* examinations, does not mention any dermic changes. Dr. Osler notes rose maculæ in eighty per cent. of cases, and slight papulæ in twenty per cent. The case of "Eruptive Fever" recorded by our Secretary in 1875 was doubtless the well-marked skin form of "Swine Fever," and, as is not infrequently the case, the intestines were not much affected. The nasal catarrh and hypostatic lung congestion indicated the pneumo-dermic variety.

We have in the foregoing conditions a ready distinction from the sporadic diseases frequently reported as "Swine Fever," such as Urticaria or Erythema, in which there is but a temporary rise of temperature and transient hyperæmia of skin, besides the absence of general prostration, loss of appetite, and fatality.

The purple condition of the skin, in occasional cases of Apoplexy, is generally intense over the abdomen only. Probably

only one animal is affected, and it is in a state of coma, the temperature normal or below it; the attack is also very sudden, and generally after a hearty meal.

Post-mortem Appearances and Pathological Anatomy.—After death, the skin becomes more discoloured, and parts of it assume a greenish-purple or gangrenous appearance. In the subcutaneous connective tissue small or large ecchymoses exist, approximate to the superficial lesions, and are thus distinguished from Anthracoid extravasations. The microscope reveals œdema of the papillæ, with plugging and rupture of the capillaries; where the crusts are removed the corium is denuded of epithelium; the connective tissue is distended with fibrinous exudations; and the sudoriferous glands are swollen, and sometimes filled with blood corpuscles. The localized superficial necrotic condition of the skin is well illustrated when the carcase is scalded and scraped. Where the crusts existed there is a circumscribed ragged *depression* of an ink-black colour. This enables us at once to condemn the carcase. Beyond the integument, the principal pathological changes are found in the intestines, lungs, pleuræ, lymphatic glands, and—in a minor number of cases—in the mouth, pharynx, stomach, spleen, peritoneum, and liver. The kidneys seldom present any but hyperæmic changes. On abdominal section, evidence of Peritonitis may exist, excess of peritoneal fluid containing flocculi of lymph, serous ecchymoses, frequently attachment of cœcum to colon, the walls of which are greatly thickened, in some places perforated. Circular, dark-grey, and somewhat elevated patches are seen through the serous coat of the large bowels, within which, upon the mucous membrane, are the peculiar protuberances which characterize the affection. These vary in number and diameter, like the papulæ on the skin; they are elevated in different degrees from the surface of the mucous membrane, the centre being the highest point, and there is a somewhat concentric appearance, thinning towards the circumference. These crusts are of a dirty-yellow or greyish-white colour. Upon the removal of the crust the denuded mucous layer is exposed. These excrescences in some cases exist in such enormous numbers that, together with the œdema of the intestinal walls, the lumen of bowel is almost occluded. Mem-

branous diphtheritic deposits are sometimes present in addition, covering the whole mucous surface. Preceding this ulceration and proliferation of epithelial elements, the mucous membrane is intensely congested, either general or localized. In the small intestines hyperæmia is less frequent, and when present less severe; but in some cases well-marked ulceration is present in them, though the large crust-like formations I have never seen in the latter. The most intense condition is invariably found at the ileo-cœcal juncture on the large side. The degenerative changes involve, in many instances, not only the mucous membrane, but muscular and peritoneal layers. Dr. Klein remarks that he found ulceration in one case only of the small intestine; this was quite different in character from the lesions in the large bowel, being pit-like, and surrounded by prominent swollen mucous membrane, as in human Typhoid. The ulceration of Swine Fever is distinguished from the latter by having "absolutely nothing whatever to do with the lymphatic follicles." In the first stage of human Typhoid, oblong prominent papulæ, or patches of swollen lymph follicles, exist, surrounded by tumefied mucous membrane.

In the next stage the swollen patches die, and are discharged as a slough, leaving pit-like ulcers bordered by elevated overhanging mucosa; this bears a strong contrast to the crust formation so characteristic of Swine Fever ulceration. During the ulcerative process many of the superficial mucous capillaries become distended and ruptured, producing the ecchymoses often observed. The localized epithelial cells become swollen, and burst through the swelling of the nuclei; the lymph spaces around Lieberkühn's crypts are swollen, and the latter glands or follicles are filled with mucous elements. Where the ulceration is intense the follicular epithelium becomes decidual; the submucous often ecchymotic from capillary hæmorrhage; and general œdema tissue is takes place in the muscular layers of the bowel, producing the thick, leather-like condition. The lymphatics of the large intestines are tumefied and hardened, and when section is made they appear hyperæmic, the cortical portion frequently being of a deep-red tint, from capillary hæmorrhage. Considerable inflammatory changes exist in the gland structure. The

bronchial and submaxillary glands present the same appearance when the pneumonic form exists. There is a great diversity in the records of different observers with regard to pneumonic complications. Dr. Voyles, in America, found in thirty *post-mortems* at one outbreak, "in every case, without exception, disease of the lungs was present, in degree from slight hyperæmia to complete softening from suppurative inflammation." In Dr. Osler's experiments in the same country, only twenty per cent. were pneumonic. Professor Axe says, "Pulmonary congestion, more or less extensive œdema, and Apoplexy, are very commonly met with." "The ordinary results of Pneumonia, as consolidation and softening, are not seldom to be observed." In an outbreak where nearly seventy animals died I observed only one case of Pneumonia, and the symptoms during life did not indicate lung disturbance. The dermic and enteric form in these cases was very severe. Pleurites, Pleuro-pneumonia, or Pneumonia, may exist together; the thorax contains serum and lymph, or patches of opacity only exist on the pulmonary pleuræ; isolated lobules of the lungs may be affected, giving them a Pleuro-pneumonic appearance; sometimes the whole lung is hepatized and undergoing softening; and œdema of the interlobular tissue, with blocking of bronchi with mucous elements, some of the lobules becoming hard, friable masses. There is occasional Pericarditis. Parasitic Broncho-pneumonia is distinguished by the presence of *strongylus paradoxus*, with excess of mucus in the bronchi; also during life by the soft, mucous, incessant cough. Ulceration has been observed in the buccal membrane, also in the fauces and pharynx; œdema of the mucous membrane and follicles is commonly noted. Professor Simonds noted cases with diphtheritic membrane in the fauces and pharynx. Dr. Osler also records one case with similar lesions in the nasal passages, larynx, and pharynx. In the stomach there are occasionally large, hyperæmic, ecchymotic, or ulcerative patches seen in the mucous membrane, sometimes involving the submucous tissue; the peptic glands are tumid, the swollen epithelium almost closing them. The spleen is enlarged in about ten per cent. of cases, and is nearly always darker than normal. The liver frequently presents a dirty-yellow

hue, the margins somewhat rounded, and the capsuli raised with nodules, which on section present a caseous appearance; infiltration occurs in the interlobular connective tissue, and accumulations of lymphoid elements in the acini. Ecchymoses in the brain and spinal cord are noted only by Schmidt.

Placed under the Contagious Diseases (Animals) Act, 1878.—Happily the disease was, in 1878, placed under the Contagious Diseases (Animals) Act, and the order cited "The Typhoid Fever of Swine Order;" which was, however, amended in 1879 by the "Swine Fever Order" now in force, to which I need not further refer than to remark, that as slaughter of affected animals is compulsory, we are compelled to turn our attention to a prophylactic rather than curative agency. Under this head we may review suppressive and preventive measures.

Recognition. Giving Notice. Quarantine Period.—It is needless to again point out the great importance of early recognition, when the Act demands that immediate notice shall be given of the existence of "Swine Fever," the pigsty or farm declared an infected place, and quarantine observed for not less than twenty-eight days; all affected animals from day to day to be slaughtered and buried six feet deep, covered with quick-lime or other disinfectants, and earth; all vehicles used for the transit of diseased animals should be disinfected.

Suppressive Measures.—Beyond this compulsory sanitation, it is necessary to take the temperature of the whole herd, and any animals above 103° F. should be placed in an isolated part of the yard until the development of the affection. It is further advantageous, where possible, to divide the remaining herd into small lots of four or five, and put them into separate pens, as far removed as possible. This renders the daily examination much easier, and gives some slight chance of escape; although I think that ninety per cent. of those exposed to infection become diseased to a greater or less extent. In some cases the external evidence—including temperature—is too slight to enable us to declare them affected, yet a *post-mortem* examination will reveal the enteric form well marked. I may claim your indulgence for a digression to cite a case. Three valuable breeding sows were in an infected place, but in separate yards, drainage, etc., being com-

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pletely divided; they were of necessity fed by the same attendant, but with separate pails, etc. An almost daily examination of them was made before the remainder of the herd was visited. At the end of the first week the temperature of one sow rose about one degree. A very careful examination was made of her skin (black), and one small vesicle only was found on her side. Her habits, appetite, excretions, etc., were normal. Slaughter was ordered. The temperature of the other sows was taken periodically, and was never found above normal. They appeared in perfect health until the end of the outbreak, viz., eighteen days, when the owner had them slaughtered for market-pork. The intestines were examined in each case, and found diseased (I do not think we are justified in passing an animal out of an infected place for slaughter as food without a *post-mortem* examination). A liberal use of carbolic acid or chlorinated lime about the pens, walls, and especially drains and *water-tables*, is necessary; also the free liberation of chlorine or sulphurous anhydride in the closed pens. The alvine excretions and uneaten food are a source of danger in extending the disease to neighbouring farms, etc. After removal of all diseased animals, the manure should be placed in a large heap to oxidize, and the surface covered with a coating of hot lime; all pervious material—such as old woodwork, soft bricks, or paving—should be destroyed. Disinfection for "Swine Fever" must be more thorough than for any other malady. The transit of dogs, cats, rats, mice, etc., should, if possible, be avoided in an infected place. Even birds may be a source of danger, in hopping about a diseased animal's pen, and then flying off to a neighbouring yard and putting their feet into the swine troughs.

Prophylactic Measures.—A true prophylactic for Swine Fever would be a grand scientific discovery, as the losses from the malady in this country and America, especially the latter, are enormous. Professor Law, of Cornell University, tersely remarks, "The highest success must attend such measures as will stop the production of the poison and destroy that which already exists." Our "Swine Fever Order" has at present done little more than show how extensively the disease prevails in many counties; but the returns must not be altogether taken to

imply that "Swine Fever" exists much more extensively now than in the past few years, but that existing disease is more frequently recognised and recorded. Yet the statistics do not from month to month show any marked diminution: until the last return or so, the only change has been an increase.

Medicinal Agents.—Some medicinal agents have been recommended as preventives, such as sulphur, the sulphites, charcoal, yeast, etc., but it is extremely doubtful if any agent would arrest the action of the *materies morbi*, were such passed into the protected system. This is the only certain demonstration of infection and protection, as an animal may be exposed in the ordinary course to infection for some days, and yet one particle of virus never gain access to the body.

Protective Inoculation.—I shall be much interested in hearing a discussion on protective inoculation. This operation has been very freely resorted to in past years for Variola Ovina and Pleuro-pneumonia, and more recently Anthrax. The two former have been freely discussed at most of our medical societies. Since the experiments and investigations of Greenfield and Pasteur on Anthrax, and protective inoculation for it, the subject has acquired a freshness, and demanded the attention of all pathological workers. Dr. Klein, in 1877, isolated the bacillus of "Swine Fever," and proved its specific nature by cultivating it to the eighth generation; then inoculating pigs with the somewhat attenuated virus, it was still capable of producing the disease. The bacillus is described as somewhat thinner than *Bacillus anthracis* or *subtilis*; it also differs in possessing a moving period; otherwise its development under cultivation is similar to that of *Bacillus anthracis* with which everyone is familiar. Some time since, in comparing the address of Pasteur at the International Congress, 1881, with the work of Dr. Klein in the cultivation of "swine bacilli," I was convinced that if the latter could be extended, a prophylactic might be found for "Swine Fever" in this country. Accordingly, upon ascertaining subsequently that the Royal Agricultural Society again intended to make a grant for veterinary investigation, I begged their consideration for the establishment of some experiments to continue from Klein's eighth generation until a vaccine (like Pasteur's *vaccin*

charbonneux) was obtained sufficiently attenuated to be used with safety, and yet to confer immunity from Swine Fever. The Society, however, expressed their determination not to continue the experiments at present.

Immunity after the Attack.—It has been noted by those breeders who have suffered much from the affection in America that animals which recover are seldom attacked a second time. This is probably the rule, as in most zymotic diseases: exceptions are, of course, on record. Dr. Osler inoculated two pigs: both animals became affected, although slightly. At the fortieth day, when both had apparently regained perfect health, a second inoculation was performed: both animals succumbed to the severe form within twenty days. The inoculation of all young pigs, say one month old, could be carried out by an organized staff in each district, as in human vaccination. It seems impossible for our profession at present to take the initiative in experimental research. The difficulties of such an undertaking are obvious, and, unfortunately, we are not stimulated by liberal Government grants, as in other countries; the liberty of investigation is also much curtailed by the Vivisection Act.

Pasteur's Work on "Rouget."—It appears, from a brief annotation in the medical journals, that Pasteur is now conducting some experiments, with the view of obtaining a protective vaccine for a disease known in France as "Rouget," which appears to possess some of the characters of "Swine Fever." The virus is fatal only to pigs and rabbits. ("Swine Fever" has been transmitted, by Professor Law, to rabbits and a sheep, and from them again to pigs. Dr. Detmers claims to have affected heifers in a slight degree: in ordinary outbreaks all other species may be exposed with impunity to the infection.) But the bacillus seems morphologically to resemble that of Fowl Cholera, rather than Anthrax or Swine Fever. If so, the diseases are probably distinct, and we shall not in this country gain practically by the investigations.

In conclusion, if I have not exhausted your patience, I ask you to discuss what "Swine Fever" really is. We are able to place it in the zymotic group or family, but here our power of classification at present ends.

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Query as to the "Varioloid" Nature of Swine Fever.—Are we agreed that it is not "Typhoid Fever"? Clinical and anatomical evidence is against it being such. Calling it Pneumo-enteritis Contagiosa does not help us: we have seen that this designation is partly fallacious, when the lungs are normal, as they are in at least fifty per cent. of cases. It must then be Enteritis Contagiosa, ignoring the most constant dermic lesions.

Instead of an endeavour to manufacture a new name for an old disease, may it not find a home with the Variolæ, variety *Suillæ*? Variola prevails in the human family almost all over the world; in the equine, bovine, and ovine species it is also well known; but, strangely enough, in the very widely distributed porcine family it appears almost unrepresented. There are no clinical records of such a malady in our modern literature except Mr. Boughton's case at Hounslow: that has been shown to resemble "Swine Fever." The author of "Veterinary Sanitary Science" places "Variolæ Suillæ" in the list, but gives no original evidence of the malady, simply enumerating the symptoms of the ovine form, and saying, "In the pig the malady follows a similar course, and has similar terminations;" also in his elaborate paper on "Human and Animal Variolæ," published in the *Lancet*, vol. ii., 1880, the human, equine, bovine, and ovine varieties are reviewed in every detail, but the poor pig again has to be contented with a few Continental records, which may possibly have been confounded with the disease so rife on the Continent, represented in our "Swine Fever." The erratic fatality of Variola may be compared in the horse and sheep; in the former quite an innocent affection, in the latter terribly fatal. So much for the negative side; for the positive, some evidence of resemblance can be adduced, and all due allowance made for the many modifications of the affection which may be cited against Typhoid on the one hand and Variolæ on the other. The points I desire to hear discussed are—

The specific nature of the malady.

The fairly regular incubative period.

The extreme regularity in the appearance of the cutaneous rash, and in its typical form the development of Varioloid characters, viz., the rose-tinted maculæ, the vesicle followed by a

pustular and crustaceous stage, and subsequently a well-marked cicatrix.

I conclude with an extract from a paper by Professor Axe, published in the *Veterinarian*, vol. xlviii., on "Typhoid Fever of Swine":—

"From the last-named source (vesicles) the virus may be collected in large quantities, in the form of a thin, transparent, colourless fluid, *not unlike that which is furnished* by the vesicles of Small-pox and Sheep-pox. Physically, so far as the unaided eye can determine, the properties of this fluid are in every respect identical with those of Small-pox virus, and its contagious principle is no less potent." Again, "The vesicle dries into a thick, dark-grey crust, similar to that of Sheep-pox; indeed, cases have come under my notice where, but for the characteristic difference of the skin itself (sheep and pig skin), it would have been difficult, if not impossible, to distinguish between the crusts."

THE GERM THEORY OF DISEASE.

BY JAMES LAMBERT, F.R.C.V.S., INSPECTING VETERINARY SURGEON FOR IRELAND, A.V.D.

(*Continued from page* 318.)

In 1879 Professor Toussaint, of the Toulouse Veterinary School, discovered the bacterium of Fowl Cholera, a disease which annually causes great havoc in the poultry yards of France. This discovery turned M. Pasteur's attention to the malady. He cultivated the bacteria which caused it in suitable fluids, and in doing so found out what was indeed important, viz., his method of attenuating bacteria, or as he calls them, "microbes." But before going further let us examine the process at some length, as it will show what M. Pasteur and his disciples mean by "cultivation." He took a minute drop of the blood of a fowl about to die of Chicken Cholera, on the end of a delicate glass rod, and put it into pure chicken broth, of course excluding all air germs, and having previously by effectual means made it sterile, or, in other words, barren, or free from germs. Then the chicken broth into which the infected drop has been introduced, is

placed in a temperature of 25° to 35° C. or 77° to 95° Fahr., and it soon becomes cloudy from the multiplication of the microbes of the infected drop. The microbes are shaped like the figure 8. From the vessel in which this first cultivation has been made he takes another very small drop, not more than can be carried on the point of a glass rod as sharp as a needle, and touches with the point another vessel of pure and sterilized chicken broth. This in its turn becomes cloudy from the rapid multiplication of the introduced microbes. You deal in the same way with a third culture vase, with a fourth, and so on, up to a hundredth, or even a thousandth with the same results. Now you will find that if you inoculate with even the hundredth or the thousandth of these culture preparations you reproduce the original disease as strongly and as virulently as ever. These culture preparations have been thus far made one after the other without interval. Now let us suppose that we allow intervals between each culture; say that between the hundredth and the hundredth-and-first we allow the liquid to rest a fortnight, or more, even up to ten months. If we compare the virulence we shall find that each delay is followed by a weakening of the next culture, so that, if we now inoculate, the virus is not so powerful. With the cultivation thus obtained by an interval we make another, and we find that each successive interval causes a weakening of the powers of the disease-producing microbe, and we therefore perceive that it is possible to prepare a culture of varying degrees of virulence. We can thus by successive cultivations with intervals between each, weaken the powers of virulence of the microbe to any degree we wish, and at last we have it fit for what M. Pasteur calls "vaccination" with no ill-effects, and yet it confers immunity from another attack of the disease. It is necessary to note that, if we have arrived at a certain degree of strength of the microbe, and the cultures are still conducted without intervals, *that* strength is maintained; but given another interval, and weakening ensues. To recapitulate in a few words, then; if each cultivation is carried on without intermission we have the same strength of the bacteria kept up, but give intervals between each cultivation and they are gradually weakened or "attenuated," until at length they lose their virulence, and a

little further, to use M. Pasteur's own words, "we touch the principle of vaccination."

What causes the weakening, or, as M. Pasteur calls it, the "attenuation" of the bacteria or microbes produced by cultivation? He ascribes it to the oxygen of the air, and he continues: "The oxygen of the air would seem to be a possible modifying agent in the virulence of the microbe of Fowl Cholera, that is to say, it may modify, more or less, the facility of its development in the bodies of animals." He asks, "May we not here be in the presence of a general law applicable to all kinds of virus?" and he goes on to say, "We may hope to discover in this way the vaccine of all virulent diseases."

To give a *resumé* of the principal points we have noticed, we may say:—

1. That all transmissible—and very probably many, if not all—specific diseases are produced by living organisms.

2. That *most* of these diseases are caused by microscopic organisms, collectively called microbes or bacteria, which may be of different shapes, such as round, or rod-like, or oblong, or spirally coiled, or figure of eight, etc. I have just said, "*most* transmissible diseases," because there are transmissible maladies, such as Measles in the pig, and Mange, for instance, and others, where a microscope is scarcely necessary to detect the disease-producing organism.

3. That the bacteria are supposed to be of low vegetable life, that they are more or less capable of movement, and that they have the power of rapidly multiplying themselves when they meet with suitable conditions.

4. That their spores, or germs, or seeds, whichever we like to call them, are very tenacious of life, but that their parent-organism, the bacterium, is readily destroyed by a comparatively low temperature, very often as low as 140° Fahr. It is a subject for great surprise to some people that contagious maladies break out long after the original disease has left a locality; but if we conceive the germs or seeds as readily springing into life, like a grain of wheat, for example, when they meet with suitable conditions, we shall perceive that there is nothing of the marvellous about the matter, nor is there any absolute necessity to fall back upon spontaneous generation for an explanation.

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5. That bacteria are so extremely minute that they, and also their germs or spores, can be very readily carried about in the atmosphere. The *greatest attention* is invited to this observation as bearing upon outbreaks of contagious diseases amongst men and animals.

6. That each transmissible disease has its own particular living organism which cannot be spontaneously generated.

When we look at the history and progress of contagious and infectious diseases, and when we see that there is a period of incubation or hatching between the exposure to infection and the manifestation of the malady, we presume that the disease-producing organisms are then multiplying themselves until they become so numerous as to make their operations apparent. In short, it is difficult, in the light shed by the germ theory, to conceive how these diseases can be produced in any other way.

Some of the principal diseases of the domesticated animals, due, we may assume, to the presence of bacteria or microbes are, to employ the common names, Cattle Plague, or Rinderpest; Splenic Fever, a form of Anthrax; Quarter-ill, or Symptomatic Anthrax; Horse Sickness in South Africa, a form of Anthrax; Foot-and-mouth Disease, Contagious Pleuro-pneumonia of cattle, Texas Fever of cattle, Tuberculosis, Variola, or Small Pox; Glanders and Farcy, Influenza inhorses, Rabies, Distemper in dogs, Swine Plague; and there are, of course, many others.

As it is impossible this evening to notice all the above-named maladies in the time at our disposal, I will only offer remarks on what at present appears to us the most important and practical, viz., Splenic Fever, "Horse Sickness," Tuberculosis, Foot-and mouth Disease, Contagious Pleuro-pneumonia of cattle, Glanders and Farcy, and Rabies.

Let us begin with Splenic Fever, which is a form of Anthrax, the most widely diffused disease of our globe. M. Pasteur, after his success with Fowl Cholera, turned his attention to Splenic Fever, or Charbon, as it is commonly called in France, and which annually causes enormous losses in cattle and sheep in that country. It is now a rare disease in England, but centuries ago it was very common and destructive. It depends on the presence in the body of a bacterium called the Bacillus Anthracis, and is a

contagious malady. M. Pasteur cultivated the Bacillus Anthracis under the influence of oxygen, and it was thereby so weakened or "attenuated" that it has been by him largely used for protective inoculation, with, he firmly believes, most satisfactory results. He also believes that this "vaccination" protects against natural attacks of this awfully destructive Splenic Fever, but his conclusions are vigorously contested by the celebrated German physician and experimentalist, M. Koch. A rather bitter controversy is going on between them, but at present the weight of argument seems to be greatly in favour of M. Pasteur. Much good may arise in various ways from this conflict of opinion.

We must not forget to say, that M. Pasteur ascribes an important part, in sometimes causing Splenic Fever, to earthworms, which he has proved bring up disease-spores, or germs, from the deeply buried carcases of animals dead of the malady, even for months and years after interment. He has demonstrated that such germs being swallowed with the food by healthy animals grazing over the graves, have communicated Splenic Fever. This is a suggestive fact in dealing with contagious maladies.

I was in Natal in 1879, and again for ten months in 1881 and 1882, and there saw very many cases of that terribly fatal disease called the South African *Horse Sickness*. It is a form of Anthrax, and is different from any disease we see, except on very rare occasions, in this country. In many cases of it horses go out of the stable to work apparently quite well, are in a very short time suddenly taken ill on the road or plain, begin to breathe rapidly, froth at the nose, and sometimes within half an hour are dead. It is a disease generally of low-lying ground, and is malarious in its origin. We now know that malarious diseases depend on living organisms, or bacteria. Like the other diseases of which the Germ Theory is supposed to be an explanation, one attack confers immunity, and an animal which has survived the Horse Sickness is said to be "salted," and therefore worth a considerably enhanced price when offered for sale. There are many curious facts connected with this disease, "Horse Sickness," about which you will find rather an exhaustive paper of mine in the VETERINARY JOURNAL for February, 1882.

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Not long ago Dr. Koch announced his investigations into the nature of the Tubercle Bacillus, which he has isolated and cultivated, and which he maintains is the cause of *Tuberculosis*, or, as it is commonly called, Consumption. It is calculated that tuberculous disease causes one-seventh of the deaths of the human race. It is, as you know, a common enough disease in cattle, and M. Koch's discoveries in connection with the Tubercle Bacillus have led very many pathologists to consider the malady a transmissible or infectious one; in fact, it must be stated that opinion is decidedly tending in that direction. It is thought probable that not only may it be transmitted amongst people living together, but that also it may be communicated to mankind by the consumption of the milk and flesh of tuberculous cattle. Whether Tuberculosis is infectious or not in the British Islands is still a much-disputed point in the medical profession. It is regarded as infectious in Spain, Italy, and other parts of Southern Europe, and great precautions with regard to disinfection are there taken after a fatal case. The weight of evidence of our highest medical authorities on the subject appears to show that they are at present inclined to think that only in rare and exceptional cases is it infectious within the limits of the United Kingdom.

It is demonstrated that Tubercle can be given by inoculation from man to the lower animals, and from these again to each other. Dr. Kammerer, the City Physician of Vienna, has recently reported that Tuberculosis is in very many instances communicated to mankind by the flesh and milk of tuberculous cattle, and he states that he regards the infection by this channel as being quite as fruitful a source amongst the young as the heredity to which it is usually ascribed.

Professor Toussaint, who has devoted much time and attention to the question, thinks it very probable that if children, and even adults, were inoculated with Tuberculosis, very few would escape infection. He says that Tuberculosis of mankind is exactly the same as that of the ox or cow. Of this he has convinced himself, by administering to animals human tuberculous matter, and by inoculating them with blood from tuberculous human subjects. Like the Tuberculosis of the cow, that of man is, he

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continues, inoculable through the digestive canal, and by blood and secretion fluids; and it always presents identical characters. He further states that true Tuberculosis, no matter whether derived from man, the cow, pig, or rabbit, can be reproduced in an infinite series with absolutely identical characters; and passes from animal to animal without being impaired in virulency; nay, more, it becomes all the more energetic and rapid in its action, the more frequently it is inoculated. ("The Contagiousness of Tuberculosis. By Professor Toussaint, Toulouse Veterinary School; in the VETERINARY JOURNAL, June, 1882.) From these opinions from such high authority it will be seen how great a subject for investigation Tuberculosis is, and how interesting it is to us as veterinarians, not only as a disease of cattle, but also as a question to be attentively considered in relation to our meat and milk supply.

Foot-and-mouth Disease, or the Vesicular Epizoötic, is a very contagious disease, and may well be mentioned this evening, as it is now at work in England and Ireland. Besides affecting cattle and sheep, it sometimes attacks pigs, goats, horses, and other domesticated animals, as well as human beings. All kinds of causes have been named as producing Foot-and-mouth Disease, such as changes of weather, bad sanitary conditions, overcrowding, fatigue, bad food, etc. It is, however, almost needless to tell you that it is becoming the general opinion, as it is the opinion of the most careful observers of disease, that it can only be caused by contagion or infection, and that it cannot be spontaneously generated. On the question of the spontaneous generation of diseases I shall have a few words to say before we conclude.

We have every reason to believe that specific living organisms or germs are the cause of Foot-and-mouth Disease. The virus is supposed to be very tenacious of life, and to remain active for some weeks. Anything may retain and carry it—forage, straw, hay, clothes, etc. A striking case is related in Mr. George Fleming's valuable work, "Sanitary Science and Police," in which it is stated that troughs which had been lying for four months exposed in the fields, but which had before been used by diseased animals, gave Foot-and-mouth Disease. Another

instance is given in the same work. A farmer owned two farms in an out-of-the-way place, and some distance from each other. On one farm Foot-and-mouth Disease had prevailed severely; the other farm was free from it. The disease disappeared from the infected farm, and nothing more was seen of it for five months, when one of the hay-racks was brought to the healthy one, and very soon the cattle which fed out of it sickened. There was no traffic in the locality, nor yet disease, until the tainted rack was carried down.

The infection of Foot-and-mouth Disease is probably carried in the air for a short distance. Some practitioners deny this; but it is good policy and very desirable to act as if we were sure of it. It is, doubtless, conveyed in straw, hay, men's clothes, railway trucks, etc., and is also communicated by using contaminated troughs or other feeding and drinking vessels. It has often been unconsciously carried by men who have been in contact with diseased animals.

Foot-and-mouth Disease was introduced into Australia in 1872 by a cargo of diseased cattle from England, but was, fortunately, detected in time, and at once stamped out.

One attack of Foot-and-mouth Disease does not confer immunity, for the same animal may have it several times. It is, however, believed by the majority of observers that animals are only attacked once in a season, but some cattle will take it at intervals of only a few months.

Inoculation is practised in some places for Foot-and-mouth Disease—not protective inoculation, but inoculation in order to give the disease to all the animals on a farm or in a herd at once, and so have quickly done with it. Impressed with something like this idea, some stockowners in this country say that it would, in the present outbreak, be better to allow the disease to spread, and so let all the cattle get rapidly over it. I need hardly tell you that the objections to such a course are many and grave, and such as could not be entertained by any responsible authority.

Pleuro-pneumonia Contagiosa.—The contagious Pleuro-pneumonia of cattle is, as you know, a specific constitutional disease, chiefly manifesting itself in the lungs and pleura, and a very

dreadful scourge it is. When we look at it by the light of the germ theory, we at once conclude that it depends on the presence in the sick animal's body of a specific living organism, or microbe, as, indeed, its whole course plainly indicates. We are consequently not surprised to learn that the bacterium has been discovered at the University of Louvain, in Belgium, by MM. Bemylants and Verriest. The bacterium exists in the form of micrococcus.

As you all know, protective inoculation against this disease has long been practised on the Continent and other parts of the world, but in the United Kingdom it has made comparatively little way, or only too often it has been tried to be condemned. It must be confessed that the failures have been mostly due to erroneous methods of procedure. Of late years, however, Mr. R. Rutherford, a talented Edinburgh veterinary surgeon, has extensively and most successfully practised the operation, and has shown how to perform it. He has fully explained all matters of detail, and how to avoid the mistakes and accidents which caused former failures. "He has," says Professor Williams in his last edition of "The Principles of Veterinary Medicine," "proved that inoculation will at once and most effectively arrest the spread of Pleuro-pneumonia amongst horned cattle." I was in Edinburgh in 1880, and from conversations with the keen-witted and practical dairymen I ascertained that they considered the operation a genuine success. You can see the *modus operandi* described at length by Mr. Rutherford in the VETERINARY JOURNAL for July, 1882.

(*To be continued.*)

Editorial.

THE EDUCATION OF THE VETERINARY STUDENT.

THE question of the hour in this country and on the Continent of Europe, so far as the veterinary profession is concerned, is the education of the veterinary student; and it is seriously engaging the attention of those Governments who care for the promotion of veterinary medicine and surgery, and expect to be compensated in proportion as they encourage students, practitioners and teachers. In this country, where the veterinary schools are proprietory or semi-proprietory, we have no paternal government manifesting its solicitude in this direction, or anxious to provide the public with well-educated, useful practitioners; and though the more thoughtful amongst us, who know from experience what the requirements of the times really are, may agitate and strive to meet them by attempting to effect improvement, yet the difficulties to be encountered are seemingly insurmountable, and success all but impossible. Schools and teachers must live, and if possible thrive. Consequently, the benches must be kept occupied, quickly filled, and as quickly emptied; and quantity, not so much as quality, may be the main object. To apprehension that any attempt at radical improvement might diminish the number of entrants to the schools, may be ascribed the opposition which some teachers have offered, for very many years, to all efforts to raise the standard of education—general and professional—by the profession, through the Royal College of Veterinary Surgeons; and this opposition has, until recently, been so far successful that the profession was considered by the public as the most illiterate of any having claims to recognition as an educated body. In this respect there can be no doubt that the schools have made a mistake, and the error has had most serious consequences. A higher and progressive standard of education would not have diminished, but rather increased, the number of admissions to the schools, and its effect in raising the position of veterinary medicine would have been immense. The schools, it is to be feared, have sometimes acted on the notion that anybody was good enough to be made into a veterinary surgeon, so long as he could pay the fees; and to admit everybody, these were fixed at a ludicrously low sum. The competition between the schools—the struggle for existence—has also tended to perpetuate this unfortunate state of affairs.

The Royal College, as has been stated, has ventured at times to intervene, but the opposition to its half-hearted essays has been only too powerful. The wisdom of its intentions cannot be denied, nor yet its disinterestedness; for if, by imposing more severe tests, the number of students was lessened, it must have suffered equally with the schools, as, like the schools, it is compelled to exist on the students' fees. But it was ready to encounter this risk, feeling that its reputation was gravely compromised by the very inferior class of graduates it may have been compelled to license, through the paralysed condition in which it was kept by external influence.

Looking back at what has been the state of things for so many years, the Royal College can scarcely, however, be exempted from blame. It has not done its duty to the profession, nor yet to the public; it has allowed itself to be gulled into the delusion that its powers were of the feeblest and most limited character, and therefore it is that a more emasculated institution probably never existed; the schools fixed the value of its diploma, and defied it to decide as to what that value should be, though they were in no way responsible for the qualifications or competency of those it licensed. We do not say this disparagingly of the schools, as we believe they feared their existence would be endangered if the Royal College took in hand the urgently-needed improvements in education.

At length the matter of general education has been undertaken by the College, and though it should have grappled with it nearly forty years ago (it might have done so as well then as now), it is never too late to mend; so it is most fervently hoped that before long the veterinary student will have to give satisfactory evidence that he possesses an amount of general education equal to that of a medical student.

In the matter of practical instruction in his professional duties, it is admitted by those who ought to be in the best position to know, that the graduate, unless he has had extra-scholastic opportunities, is wofully deficient; and the schools confess that they have not the facilities for imparting this most essential element in education. All kinds of absurd propositions, apologies, and suggestions have been made in this respect; but none of them are worth listening to. It has been contended that the examinations should be more severely practical, but everyone who knows anything of the difficulties under which these examinations have to be conducted, and what they should really be, is aware that the facilities for carrying them out do not exist, and from the very nature of things cannot exist at any of the examination centres. Veterinary examiners have not the same resources as medical examiners. Therefore it is that pupilage with a veterinary surgeon, for a few months before graduation, has been proposed by the Royal College, and endorsed by the profession, as the only likely means by which the student, who probably may know nothing whatever of the manipulation or habits of animals, may acquire some idea of the practical details of his future calling. This has, as usual, been opposed by those whose views or interests are not in accord with the great majority; but the arguments they employ are too trivial, unsubstantial, and reckless to be worth discussing here. Suffice it to say, that while they assert that practitioners are not competent to afford practical instruction, they are themselves recruited from the ranks of the practitioners; and also that these asserted incompetent practitioners examine students for the diploma of the Royal College, without their incompetency being challenged.

A sufficient amount of practical knowledge the veterinary student should and must possess before he is imposed upon the public as fit to practice his profession; this the schools admittedly cannot give, and the examiners cannot sufficiently satisfy themselves he has. The Royal College has recognised this fact, and has sought power, in a supplemental

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charter it has applied for, to meet the difficulty in the only way possible—pupilage for a limited period before graduation, with a veterinary surgeon. If this power is not granted by charter, then it can be exercised without it. The period of study can be extended to six or twelve months, being remitted in the case of those who can give evidence that they have been pupils; and this interval may be devoted to obtaining that practical skill which no one dare deny is necessary, but which the schools justly admit they have not the opportunity for giving. It was not necessary to have asked for this power in a supplemental charter, as it was already possessed by the Royal College; therefore it may be exercised whenever the profession wills that it should be. The need for this knowledge is urgently pressing, and no personal, sentimental, or interested motives should be allowed to stand in the way of its obtainment. He is no friend to public and professional progress who opposes the improvement of veterinary education.

THE FLEMING TESTIMONIAL.

AT the conclusion of the annual meeting on May 7th, Mr. T. Greaves, on behalf of the profession, presented this testimonial, which had been subscribed for by members in nearly every part of the world, to the President of the Royal College of Veterinary Surgeons, Mr. George Fleming, in the following address :—

Dear and respected Sir,—I rise, sir, to perform a most pleasing duty. I assure you it is an especial gratification to me that it should have fallen to my lot to be the medium of expressing to you the heartfelt and cordial sentiments of the members of a numerous and noble profession. I hold, sir, that no loftier or more dignified position can be occupied by man than to be intrusted to perform the delicate and important duty of adequately expressing the true sense which animates its members, for the distinguished services you have rendered the veterinary profession.

We recognise in you, sir, one who has consecrated all his life, all his energies, and all his means, for the advancement of our profession; you have the power of intense application, and have from childhood been filling the cells of your brain with useful knowledge; your earnest, sagacious, and unwearied efforts to raise our profession, coupled with your zeal and enthusiasm, prompted you to do something worthy of your faculties. Methinks I hear you say :—

> "The moments fly on lightning's wings,
> And life's uncertain, too,
> We've none to waste on foolish things,
> There's work enough to do."

And now, through long and indomitable energy having achieved such great results, your mind, warm with exalted ideas, must experience a rapture in retrospect, an undefinable tender pleasure in looking back on duties performed, with the assurance that now our profession has a great future before it.

This is the second time I have had the great honour of presenting you with a testimonial from the veterinary profession, and I am proud to know that you possess the continued confidence of your professional brethren—the feeling of obligation to you, and the sincere esteem in which you are held, is deeper and deeper.

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The idea of this testimonial emanated from our old friend, Mr. John Bean Martin, of Rochester. I found that his sentiments were entirely in unison with my own upon this point. On making extensive inquiries, I also found the same anxious desire existed universally in the breast of every one I conversed with, and that it was only waiting for an opportunity to develop itself.

And now, sir, I am proud to present you with a token of gratitude from members not only of Great Britain and Ireland, but also from America, the United States and Canada, India, Africa, and Australia, for the distinguished services and the long-continued efforts you have made to advance and elevate our common profession.

One of these portraits we present to you, and ask your acceptance; the other (the full length one), we present to the Royal College of Veterinary Surgeons. It will be a companion picture to the one presented to Major General Sir Frederick Fitzwygram twelve months ago; they are twin giants in our profession. Our children and children's children will look upon them with a feeling of pride and veneration, and will bless God they had lived, and in their day and generation had done such good work for us. Yes! generations will gaze upon that grand spectacle—long after you are both removed from amongst us—they will know that you have done noble services, and left an imperishable name, that you stimulated the minds of men with sublimer and more exalted thoughts of their profession, and of duty, enriching the world with your keen observation and giving to life nobler aspirations.

We also beg your acceptance of a further present—of two pieces of silver plate, one a centrepiece, and the other a tray of the value of 200 guineas; and it only now remains for me to say, that we trust and pray that you, your wife and family, will have vouchsafed to you all health, long life, and every comfort to enable you to enjoy these presents, which are freely given, out of the bounty of 310 members of a profession, in which we look upon you as one of its brightest ornaments.

Upon each portrait and upon each piece of silver is affixed the following inscription:—

"*The Royal College of Veterinary Surgeons.*

"Presented by its Members to GEORGE FLEMING, Esq., F.R.C.V.S., LL.D.,

President 1880-1, 1881-2, 1882-3,

as a token of sincere esteem and gratitude, for his many distinguished services in veterinary literature, and in the obtaining of the Veterinary Surgeons Act of Parliament, 1881, by which the social status of the profession has been greatly elevated, May 7th, 1883.

"THOMAS GREAVES, Knott Mill, Manchester, *Chairman*,
"HY. JOSEPH CARTWRIGHT, Wolverhampton, *Treasurer*,
"JOHN BEAN MARTIN, Rochester, *Hon. Secretary*."

Mr. Greaves further stated, after paying all the expenses that had been incurred, the Committee found a sum of £32 remained in hand. He proposed, and the Committee at once agreed, that £30 should be invested in a diamond ring, and presented in the name of the veterinary profession to Mrs. Fleming. He was happy to say that that morning Mrs. Fleming selected a ring out of a large number, and now with very great pleasure I present it to Mrs. Fleming by her husband. (Applause.)

The PRESIDENT, who was most cordially received, said it was scarcely possible for him to state in words the deep sense of pride with which he accepted this evidence of their bounty and gratitude. It had been said that out of the fulness of the heart the mouth speaketh; but this, in his case, was not a correct assertion, as he found that in proportion as the heart was full, so

the mouth failed in expressing what the speaker felt. Their history was, to some extent, his own history; he was one of themselves; he had passed through every grade, commencing at the bottom and rising as well as he possibly could to the top, and therefore he could speak to them as one who had toiled like themselves. They were cognisant of his history, now almost a public one. From his early days he had been deeply impressed with the necessity of promoting veterinary science in these kingdoms and in English-speaking countries. When he was first ushered into public life as a qualified member of the profession, he felt very strongly that their position was very far from what it should be; and commencing life under certain disadvantages, he had very much to do in order to start on equal terms with others who were working in the same direction and had already done good work. Nevertheless, he looked back to those struggling days with feelings of the greatest pride and satisfaction, because he found that the more he attempted to teach himself, the better he was taught, and the better able to apply that which he acquired. The position of the profession at that time was known to them all. For very many years they were not looked upon as members of a profession which could hold its own in society; and at the time of the outbreak of the Cattle Plague, in 1865, they received an amount of abuse and defamation which perhaps no other profession ever had to submit to. In the columns of the leading newspapers they were denounced as "ignorant, illiterate, and brutal"; and perhaps it was as well that those words were written, because without such stimulus he did not think he should have worked so hard. From that time he made it the object of his life to prove, so far as an individual could, that they were neither illiterate, unscientific, nor brutal, and the profession had now, he felt, recognised that he had done his duty in that direction. They had declared it, and he felt that no higher reward could be bestowed upon any one than that which they had accorded him. No men were better judges of a man's qualities than those in the same position as himself, and to receive the substantial, noble recognition which they had made was to him far higher evidence of merit, and a source of greater pride, than any other distinction which could be conferred upon him. The severest criticism which a man could expect was that which was generally made him by his colleagues, and if he had undergone this so satisfactorily as to merit such abundant recognition now, it would be a lifelong pleasure to be reminded of it in the tokens which they had asked him to receive.

He had toiled for long years, by night and by day, to promote the instruction, the elevation, and the welfare of the veterinary profession, and at sacrifices and risks which they could never be aware of; his most strenuous efforts had been exercised towards maintaining the unity of the profession, so often menaced, and now secured by the Veterinary Surgeons Act; while nothing was left undone to demonstrate to the public the large measure of utility and humanity which appertained to their calling. He gloried in the knowledge that he possessed the friendship, confidence, and esteem of every member of the profession whose friendship, confidence, and esteem were worth possessing, and that alone was worth living for and striving to obtain. Twice in four years the profession had given most unprecedented evidence of its appreciation of his disinterested labours, and no greater incentive could be held out to future workers like himself than such testimony. To the gentlemen of the Committee and to all those who had aided them in bringing such a flattering record of their opinions to this happy conclusion, he could but say thanks, thanks, and repeated thanks. The memory of their goodness would never be effaced from his mind, and though Mr. Greaves had alluded to him in terms far too eulogistic, yet this was only an evidence of the kindly spirit with which they had looked upon all he had, through the help of Providence, been able to achieve. If he had been able to accomplish much, this was due

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not only to robust health and a firm determination to overcome every obstacle, but to the assistance, loyalty, and zeal of those who aided and encouraged him. He did not know that he could add more; it was difficult indeed to speak of oneself, but he could assure them that so long as he lived he should do his utmost to promote the welfare of the veterinary profession, not only in these kingdoms, but throughout the world. (Loud applause.)

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,,	Mr. Batty's Bill	240	0	0
,,	Secretary's Expenses	28	0	0
,,	Treasurer's ,,	5	0	0
	Cash in Hand	11	16	6
		£465	6	6

J. B. MARTIN, *Hon. Secretary.*

THE BACILLUS OF GLANDERS.

BY O. ISRAEL, ASSISTANT AT THE PATHOLOGICAL INSTITUTION, BERLIN.

KOCH'S discovery of the bacillus of Tuberculosis has opened out a new field with regard to this class of diseases, and especially so with respect to Glanders and Syphilis. I devoted my attention last summer to the first-named of these affections.

When I commenced to work at the subject, it struck me, from theoretical observation, that the disease was due to a fungus, which, upon examination of the organs so affected, I found to be the case. I at once set to work to cultivate the fungous elements, and to use various colouring agents for staining them. I soon discovered I was dealing with a peculiar material. Through the kindness of Prof. Dieckerhoff, of the Berlin Veterinary School, I was enabled to obtain large pieces of horses' lungs containing well-marked glander lesions. From these I inoculated the serum from coagulated horse blood, and obtained by cultivation two forms of bacilli; the one was small and innocuous, the other large, and produced Glanders in rabbits when introduced into their systems. The latter bacillus was very similar to that of Tuberculosis, it being about the same length, but slightly thicker, the most distinguishing difference being, however, the relatively large size of its spores. I found this same bacillus on three different occasions when examining fresh material. I inoculated rabbits with the fifth and sixth generation of the bacillus. Two of them showed symptoms of the lymphatics being affected, as well as the characteristic ulcers on the Schneiderian membrane, and typical lung nodules. The rabbits were inoculated on the shoulder: one animal died without showing any signs of Glanders, whilst another remained alive. To control the correctness of my observations, I sent the diseased animals to my friend Prof. Dieckerhoff, who confirmed my opinion, and pronounced the lesions identical with those of Glanders. After hardening these tissues, I examined them, and discovered the same bacillus as that used for cultivation. There appeared to be no difficulty in cultivating the Glanders bacillus; therefore I determined to wait until I could obtain some fresh equine Glanders, to get some fresh material (cultivations) in order to repeat these experiments, and so to ratify my results, before inoculating a horse. After a time I had the opportunity of examining a living glandered horse, and I found the bacilli were not present in the pus from the nasal ulcers at all, and only sparingly so in the subcutaneous and cutaneous "Farcy buds." Every precaution was taken in obtaining the material from these: the hair was first shaved, then the grease removed with ether, and finally the part disinfected with a solution of corrosive sublimate. Five trials to obtain a cultivation of the bacillus from this source remained ineffectual; although there was a peculiarity in one special case which I will relate presently. These cases of Farcy were not numerous, and it was some time before I could determine whether the sterility was due to the use of hot platinum needles or not. However, I think it is clear that the bacilli in this situation are no longer in a state to multiply. Microscopical examination of this puriform matter showed numerous spores, which I considered to be spores of the Glanders bacillus, although the rods themselves could not be found. From this it would appear that the life of the bacillus soon becomes destroyed after the death of the tissues themselves. I have not yet been able to obtain any fresh material for cultivation, and therefore have not had the chance to inoculate a horse.

During the intervals which elapsed between the various cultivation and

inoculation experiments, I was engaged in examining the hardened tissues with various colouring agents. The ordinary solutions of the aniline colours stained them with various degrees of intensity; therefore it was out of the question to expect to discover a similar specific reaction to that found with the tubercule bacilli. The difficulty of detecting them in the tissue renders the use of some colouring agent imperative; therefore I tried the methyl-violet, but this stains the nuclei of the tissue as well, and there is the difficulty of distinguishing these from the bacilli themselves, which are rarely found in clusters or large colonies. Although the bacilli are easily detected in the caseous tissue, still they appear to be better coloured in the inflammatory zone. I have never yet been able to detect them in the hepatized portion of lung surrounding the nodules; but as my investigations have been so limited, and the anatomy of Glanders is nearly as extensive as Tuberculosis, this point cannot at present be settled. With regard to the distribution of the contagium in the body, I am not able to speak, except that I accidentally discovered, on section of the lung, one of the small arteries filled with an embolus, and this was found to be studded with bacilli. From its compactness, it was evidently not of a parasitical nature, such as are those in Diphtheria, Endocarditis Ulcerosa, and septic processes, where the whole plug appears to be formed of micrococci; but rods were distributed throughout the decolourized mass, which indicated that the embolus was aged. The submucous veins of the nostril may be looked upon as the origin of these emboli, as those around the ulcers are distended with thrombi. The most important channel for the contagium to gain access to the lungs appears to be inspiration: as the air passes through the nasal cavities it carries portions of contagious matter with it.

I mentioned above that there was a speciality about the inoculation material obtained from the skin abscesses, and I will here briefly point it out. From the little abscesses in the upper lip of a horse affected with chronic Glanders, I found small micrococci, which multiplied in cats, and in horses produced a small abscess at the point of inoculation, these containing a thin liquid pus. I mention this because it is quite possible that other organisms may grow and multiply in the same media, and along with those of Glanders.

THE TREATMENT OF LAMINITIS IN THE HORSE.

BY PROF. DR. CSOKOR.

It is well known from experience that when a horse suffering from Laminitis is treated early, *i.e.*, before the malady has existed twenty-four hours, the prognosis may in most cases be said to be favourable. In those cases, however, where the disease has existed longer, or is of a very severe form, or where ordinary treatment has been carried out from twenty-four to forty-eight hours without any benefit, I scarify the coronets on both sides of both feet, say three or four insertions of the lancet; but the number of incisions depends very much upon the amount of blood obtained. If the coronary artery is opened, and it bleeds too freely, apply a small bandage, and a stitch may even be required through the lips of the wound. Sometimes bleeding occurs the following day when the bandage is removed. However, the results from this method of treatment have been very good, although I do not neglect other treatment, for in some cases (according to circumstances) I apply cold applications (ice), etc.

Two of my colleagues, to whom I had reported my success from this operation, have also tried it, and have met with similar good results.

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ACTINOMYKOSIS OF THE COW'S LUNG.

BY HINK, V.S., OFFENBURG.

At a *post-mortem* examination of a ten-year-old cow, I found the right lung partially adherent to the pleura; the middle lobe of the lung was studded with yellowish, hard nodules, about the size of peas, which on first sight could not be distinguished from ordinary tubercle. The other parts of the lungs were perfectly normal.

Upon closer examination, these nodules were found to be easily shaled out, and could even macroscopically be distinguished from tubercle. When cut into, several of them presented openings in their centre, out of which small worm or maggot-like white bodies could be pressed, each having an ochre-yellow cretaceous end. The rest of the nodule was of a grey colour, but thickened on the outside.

Microscopically, the ochre-yellow points turned out to be calcified actinomyces, which, on pressure of the cover-slip, broke up into exquisite radiating wedge-shaped bodies, covered on their outside by a mass of so-called granulation cells. In other parts of the field there was an innumerable quantity of refracting bodies, which were nothing more than isolated portions of the hyphen. There were also a few pear-shaped bodies and round and oval cells, which were attached to portions of the hyphen, and in one part of the field a finger-like part of the hyphen was detected. These were undoubtedly connected with the formation of spores, although they were in such small numbers.

On adding HCL to the preparation, the calcium was dissolved out, but the fungus still remained.

From a section I could study their structure much closer. In the centre of the nodule there was a more or less calcified fungus, embedded in a layer of granulation cells; around this was a loose connective tissue infiltrated with granulation cells; farther outwards these cells became less in number, but the connective tissue became more compact, forming a fibrous capsule.

This process was limited to a small circumscribed part of the lung. The nodules were mostly the size of peas, and contained in their centre several calcified fungi, of a beautiful radiating structure, without presenting any perceptible nodular swellings on the periphery.

The case related by Pflug was acute, whilst that related above is chronic, and limited to a small isolated part of the lung tissue. Pflug found the fungus in the commencement of its life, whilst in my case its life had ended: this accounts for the absence of the calcification in his case, and its presence in mine. The extent of the process depends upon the mode of infection. In any case it was primary contagion, and not metastasis; and I come to this conclusion from the absence of any disease of the tongue (hardening) or glands (swelling). The actinomyces' spores must have been suspended in the inspired air.

THE BRITISH VETERINARY ASSOCIATION.

THE first meeting of this Association was held in London on May 8th, and was very successful. The report is not yet ready for publication, but we hope to publish it in our next issue.

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VETERINARY SCHOOL FOR BENGAL.

THE following resolution of the Government of Bengal in the Medical Department appears in the *Calcutta Gazette*:—

"Reports of severe outbreaks of cattle-disease have for many years past reached the Government from various parts of these provinces, and the question of preventing or mitigating these visitations has from time to time received much attention. The matter was brought into special prominence in 1868 and 1869, and a Commission was appointed by the Supreme Government to inquire generally into Indian cattle-plagues and to report on the measures which might be adopted to check their ravages. The Commissioners in their report submitted in 1871, suggested various precautions to prevent the spread of disease on the appearance of epidemics, but laid stress particularly on the need of a skilled agency for the treatment of cattle, and recommended the establishment of a school for the special objectof imparting instruction in veterinary science, and training a class of natives for service among the people, whether as Government officers or as private practitioners.

"2. The want of a staff of natives possessed of a fair knowledge of veterinary treatment has been repeatedly felt in Bengal in connection with outbreaks of cattle-disease. Efforts have been made in past years to convey instruction to the people in these matters; and the officials have on the occurrence of epidemics, generally enjoined on owners of cattle and endeavoured to enforce, as far as practicable, the observance of such precautions as were likely to check the spread of contagion. These measures, however, though productive of some good, have been attended with no lasting success. Permanent improvement in the treatment of cattle can apparently be attained only through the agency of a body of native veterinarians, constantly working among the people, and ready in times of epidemics to undertake the introduction and supervision of both preventive and curative measures in the localities affected.

"3. The Lieutenant-Governor is therefore of opinion that the question of opening a veterinary school in Calcutta should now be definitely taken up and settled by the Government, and he has decided to refer it, in the first instance for inquiry and report to a committee of gentlemen specially qualified to deal with the subject. The following gentlemen are appointed members of the Committee:—President—Surgeon-Major K. McLeod, M.D. Members—Inspecting Veterinary Surgeon J. H. B. Hallen, Indian Veterinary Department, General Superintendent of Horse Breeding Operations in India; T. Greenhill, M.R.C.V.S.

"4. The students to be provided for should be of the same class as those now trained in the vernacular medical schools, but Mr. Rivers Thompson would himself prefer the establishment of a separate institution instead of a branch attached to the Sealdah Medical School. The Committee should report on the cost of such an institution, the staff to be employed, and generally on the instruction to be given. The question of the best site for the school might also be considered by the Committee. It seems to the Lieutenant-Governor that, for practical observation and treatment, Ballygunge or some suburban site would be preferable to Calcutta itself.

"5. The Committee will be good enough to assemble as soon as possible, and to submit their report for the information of the Lieutenant-Governor before the end of the present cold season."

Proceedings of Veterinary Medical Societies, &c.

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF THE COUNCIL, HELD AT THE FREEMASONS' TAVERN, MAY 7th, 1883.

The President, G. FLEMING, Esq., in the Chair.

Present:—Messrs. Fleming, Pritchard, Greaves, Wragg, Dray, Taylor, Cartwright, Perrins, Gowing, Santy, B. Cartledge, and the Secretary.

The SECRETARY read the notice convening the meeting.

Letters were announced from Professor Simonds and Mr. Broughton, regretting their inability to be present.

The SECRETARY announced that the Central Veterinary Medical Society had presented the Council with fifty guineas towards the College Fund.

On the motion of MR. DRAY, seconded by MR. CARTWRIGHT, a vote of thanks was passed to the Central Veterinary Medical Society for their gift.

Mr. GREAVES asked whether any action could be taken in reference to the £1000 that was proffered to them under the will of the late Mr. Field.

The PRESIDENT said it had been decided to discuss that subject at the next quarterly meeting of the Council.

On the motion of Mr. TAYLOR, seconded by Mr. DRAY, the minutes were taken as read.

Mr. DRAY proposed the re-election of Mr. A. W. Hill as Registrar. The past ought to be a guide to the future, and Mr. Hill's antecedents were a passport in his favour. His assiduity and diligence were deserving of every commendation. His actions manifested his zeal in the interests of the profession.

Mr. WRAGG seconded the motion, which was unanimously agreed to.

The SECRETARY thanked the Council for the honour they conferred upon him. He had had an immense amount of work, but felt much gratified to know that the Council had taken cognizance of his labours. With a constituency now numbering 3,400, it was sometimes difficult to please every one, notwithstanding the great desire to do so.

Mr. DRAY said that for some time the work of the Registrar had been Herculean. He had had opportunities of judging how very hard Mr. Hill had worked in the performance of his duties as Registrar. The College had not only been besieged by letters, but also by people at all hours of the day, and even at some hours of the night, and Mr. Hill had always received them in a gentlemanly and courteous manner. The Council ought to recognise such valuable services, and he was sure they would, and he therefore proposed "That a bonus of £50 be presented to him."

Mr. SANTY seconded in equal terms the proposal.

Mr. GREAVES asked the President whether it was in the power of the meeting to make such a grant.

The PRESIDENT, while endorsing every word that Mr. Dray had said, thought that the proposal should be reserved until the next quarterly meeting, when the proposal would be considered by the whole Council.

Mr. DRAY expressed a hope that it would be unanimously supported when he brought if forward again at the quarterly meeting. He hoped it would appear on the Agenda on that occasion.

The Council thereupon ordered that it be entered on the Agenda for the next quarterly meeting.

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The SECRETARY read a letter from the Privy Council office, dated May 4th, 1883, stating that a petition had been received from the Highland and Agricultural Society of Scotland objecting to the part of the Supplemental Charter which provided for a term of pupilage for candidates, and suggesting that the final examination should be of a practical nature. If the student failed to pass, he might be required to study at a veterinary college or with a veterinary surgeon. The Lord President wished to know if the Council had any observations to offer with regard to these suggestions.

The PRESIDENT said he thought the reply to be sent should be couched pretty much in the terms of the discussion at the Council meeting, to the effect that the Royal College of Veterinary Surgeons had for years instituted an examination such as that suggested, but it was decided by a majority of the Council that there were not facilities for affording the requisite instruction at the schools, and that even the examiners at the final examination had not facilities for testing the fitness of students in that respect. If the Privy Council were made aware of that fact it would probably be sufficient.

Prof. PRITCHARD said it occurred to him that it was rather impudent on the part of the Highland Society, after the arrangement that had taken place between them and the Royal College of Veterinary Surgeons.

The PRESIDENT said he most acutely felt the position that had been taken up by the Highland Society. He had seen three petitions that had been lodged against the Supplemental Charter. One was from the Edinburgh Town Council, another from the Highland Society, and the third from the Town Council of Glasgow. The latter objected to the raising of the fees and the pupilage ; in the other petitions objections were also made to these, and one of the reasons set out was that by serving a pupilage the morals of the pupils would be injured. A more slanderous assertion could not be made against a body of professional gentlemen. Still, he did not blame the Edinburgh Town Council or the Highland Society, but the advisers of those bodies, and he was afraid that the instigation to such assertions came from members of their own profession. The morals of the members of the veterinary profession would compare favourably with those of any other profession, and he could safely say that at the veterinary schools in Edinburgh the morals of the students were much more exposed to damage than they would be if the young men were simply pupils of members of the profession. If such assertions as he had alluded to were put into the mouths of public bodies by members of their own profession, how could they ever hope to maintain their position? The petitions were shown to him privately, and he confessed that when the Lord President of the Privy Council asked him what this meant he could not answer him. If the veterinary profession did not know what its own requirements were, he was perfectly certain that the Highland Society did not. He therefore thought that in their reply to the letter they should endeavour to show that the Highland Society was going beyond its province, that the subject had been fully discussed by the profession, and that the terms of their petition for a Supplemental Charter were arrived at after due consideration. The Highland Society evidently did not know that for years the Council had instituted the examination now suggested, neither did they appear to know the requirements of the profession. The question was a very serious one, and the Highland Society had no right to interfere in the matter. It was solely a question between the Privy Council and the Royal College of Veterinary Surgeons.

Mr. GREAVES said he was delighted with what the President had said. The Highland Society, as a corporation, could not be aware of the true position of the profession. There was not a vestige of truth in the charge with respect to the demoralising of the youths, which was ten times as great at the colleges, especially in Edinburgh, as at any private establishment.

Prof. Spooner and other men of great eminence had said, over and over again, that they could not give a practical educati on to the students in the short time that they remained at the colleges, and they required other teaching in order to make them practically efficient.

Mr. DRAY proposed that a letter be sent to the Lord President of the Privy Council, embodying the views stated by the President.

Mr. WRAGG seconded the motion, which was agreed to.

Professor PRITCHARD asked if there was any way of ascertaining who the particular advisers of the Highland Society and the Edinburgh Town Council were.

The PRESIDENT said it was easy to guess from the language that had sometimes been used at the Council table.

A vote of thanks to the President terminated the proceedings.

THE FORTIETH ANNUAL GENERAL MEETING WAS HELD AT THE FREEMASONS' TAVERN, MAY 7TH, 1883.

The President, G. FLEMING, Esq., in the Chair.

Present:—Messrs. G. Fleming, W. A. Taylor, A. H. Santy, Jas. Reilly, H. R. Perrins, H. J. Cartwright, Geo. A. Banham, W. Williams, James Freeman, B. Cartledge, Thomas Greaves, G. Western, Thomas Walley, John Pemberthy John George Cross, H. W. Thomas, J. S. Price, C. Moir, J. Mackinder, James Lambert, T. D. Lambert, E. T. Cheesman, Thos. Walton Mayer, W. J. Mulvey, David Dudgeon, Genl. Sir F. W. Fitwzygram, M. J. Harpley, H. D. Gibbings, T. Briggs, W. Robertson, F. H. Y. Pedler, D. Gibbons, F. W. Wragg, William Pritchard, William Wilson, J. T. King, Fredk. G. Samson, James Rowe, E. M. Davy, Thos. Burrell, George J. Gould, Henry B. Hancock, Percy B. Spooner, J. McCall, W. G. W. Boswell, T. W. Gowing, junr., C. Whitney Gillard, C. C. Sanderson, A. J. Owles, John Ward, Peter Taylor, F. Morton Wallis, Alex. Lawson, M. Hack, W. Burt, A. R. Charles, J. Gibbs, James Hall, George Gray, W. B. Walters, Ben. H. Russell, J. G. Parr, W. H. Bloye, J. H. Ferguson, W. Helmore, Osborne Hills, Alfred C. Wild, Layton J. Blenkinsop, Edwd. S. Shave, Thomas Moore, Thomas Pottinger, Charles Sheather, J. E. Elphick, A.V.D., J. Roalfe Cox, J. M. Gillingham, Hartley J. Batt, Edward Woodger, T. G. Batt, Sydney H. Slocock, John Cameron, James Broad, W. R. Hagger, William Hunting, Henry L. Simpson, and A. W. Hill, Secretary.

The SECRETARY read the notice convening the meeting.

Election of Council.

The SECRETARY read the result of the ballot for members of the Council, from which it appeared that Messrs. W. Robertson obtained 679 votes; L. W. Axe, 489; F. W. Wragg, 476; W. Whittle, 442; W. Duguid, 406; J. R. Cox, 386; Alex. Robinson, 377; C. Stephenson, 303; W. Broughton, 273; J. Borthwick, 250; J. Woodger, 216; J. D. Barford, 195; H. Olver, 165; and W. B. Walters, 108.

The first six on the list were elected members of the Council.

Messrs. G. R. Dudgeon, Charles Sheather, Percy B. Spooner, Henry J. Hancock, Harry C. Talbott, Thomas Pottinger, H. Durant Gibbings, and Ernest Edwin Batt, officiated as Scrutineers.

On the motion of Mr. DRAY, seconded by Mr. P. TAYLOR, a vote of thanks was passed to the Scrutineers.

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The minutes of the last annual meeting were taken as read and signed by the Chairman.

The report was then received and taken as read.

Mr. T. W. MAYER moved the adoption of the report. With reference to the new building, he said he did not think they would obtain any assistance from the Treasury. It was useless to ask for money, but they had a right to ask for a site upon which to build; and if the Government were disposed to recognise the veterinary profession, which they had never done yet, the least they could do was to give them a spot to build on. He hoped that the Council would endeavour to proceed in this matter, for with the number of members that they had they ought to be able to raise enough money to build a moderate-sized church. They had received a munificent benefaction from the estate of the late William Field, and he had no doubt that that would exercise a stimulating effect upon the profession, not only to secure that benefaction but to increase it. It was his good fortune for a number of years to enjoy the friendship and hospitality of the Field family, and he could say that no more worthy man ever lived, or one more desirous of promoting the efficiency of the veterinary profession than William Field. (Applause.)

Mr. MACKINDER called attention to the part of the report referring to the registration of existing practitioners, which stated that the Council had required objections to be made in the form of an affidavit. This he said had been found very objectionable; in most cases the information could be obtained in other ways, and they ought not to insist upon a sworn affidavit.

Mr. W. J. MULVEY concurred in the objection, and mentioned the case of one man who applied for registration, who had been sentenced to five years' penal servitude for robbing the Postmaster General while serving as a postman in a large town. He (Mr. Mulvey) brought the case under the notice of the College, and sent evidence of the fact, but he declined to make an affidavit on the subject. The necessary evidence could have been obtained by the Registration Committee by applying at the Home Office.

Mr. DRAY said the Registration Committee had been most careful not to place any man upon the Register who had been convicted before the magistrates. It may have happened that improper persons had been admitted to the Register, notwithstanding the vigilance that had been exercised; but he could assure the members that the Registration Committee had performed their duties in a most diligent and conscientious manner.

Captain RUSSELL asked what steps could be taken in the case of persons styling themselves veterinary surgeons who were not entitled to do so.

Mr. T. S. PRICE called attention to the voting papers for the Council, and asked why it was necessary that they should be sent in seven days before the meeting was held. He thought two days would have been quite sufficient. With reference to the handsome gift from their respected friend Mr. Field, he wished to impress upon the members that unless they could find another thousand pounds within twelve months, that money would be lost to them. The Council should, therefore, strain every nerve to make it well known to the profession in general that they must produce a thousand pounds before they could claim that gift as their own. With regard to the registration of existing practitioners, he knew that the Council had had a very arduous duty to perform, but it did seem an extraordinary thing that they should send letters out stating that members of the Royal College of Veterinary Surgeons protesting against persons applying for registration must send in their reasons before a certain date, and then, when those written protests were sent in, that a paper should be sent from the Council to say that the protests must be in the form of a statutory declaration. He and two or three other London members called a meeting and got these statu-

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tory declarations drawn up as quickly as possible, and he had the satisfaction of taking to the Secretary of the Royal Veterinary College ninety-one statutory declarations against persons in London who wanted to be placed on the Register, and he thought if that meeting had not been called there would have been a far greater number placed upon the Register than there were at the present moment. The result of the action of the Council, however, was that several gentlemen were so disgusted after what they had done that they said they would not take any further trouble in the matter at all. With regard to the new Supplementary Charter, he thought it would be a great advantage to the profession to enforce pupilage. It was a step in the right direction, and he should be glad to see it carried out. It was also fair that students should pay increased fees for the advantages that they enjoyed.

Mr. HUNTING then criticised the report in considerable detail. With reference to the election of examiners, he thought the present board of examiners was a very good one, and he should be sorry to see the Council try to get rid of those members of the medical profession who had rendered such valuable services in past years by assisting at their examinations. The matriculation examination was a step in the right direction, but he thought that a man should be allowed to make up a sufficient number of marks in the obligatory subjects by excessively good work in the voluntary subjects. As to Euclid and algebra, he thought they might be safely left out and replaced by modern languages and, say, physics. It would be better for a man to pass a fairly good examination in electricity, statics, or dynamics, than in ancient or modern history; for certainly a knowledge of electricity at the present day would be of more advantage than the ability to write a learned treatise upon the causes that brought about the second Punic War. He had nothing but praise and thanks to say about the new Act and the men concerned in it. He thanked the Council, the Committee, and the President, and he would go out of his way to thank him more positively were it not that he was reminded that more eloquent tongues than his would do it by-and-bye. With regard to the new Supplementary Charter, he objected altogether to the period of pupilage, and thought that the object sought to be obtained would have the effect of putting every possible obstacle in the way of men entering the profession. Out of the six points named, was there one that was worth the trouble or expense of going to the Government, or worth keeping up this eternal quarrel between the governing body and the schools? Was it worth while adding any more friction by means of this proposed charter, consisting of six points, two of which were injurious and three altogether useless? He concluded by proposing an amendment—"That the report be not adopted unless the whole paragraph in reference to the new Supplementary Charter was omitted."

Mr. WILSON in seconding the adoption of the report as proposed by Mr. Mayer spoke of the increase in the examination fees. Looking at the great expense upon a young man's entering the profession, he thought they should consider well before making a proposition to increase that expense.

Mr. DUDGEON said he was old enough to remember the time when the first attempt at compulsory pupilage was proposed, and that resulted in the formation of the Highland Society's Board. It was only three years ago that that Board was done away with, and it was rather singular that an attempt should be so soon made to enforce a compulsory pupilage clause. He thought that the examiners had sufficient power to see that every student had a thorough practical knowledge of his profession before he obtained his diploma. To say that he must become the pupil of a registered veterinary surgeon was going a great deal too far. He should certainly enter his protest against imposing a compulsory pupilage, and also against increasing the examination fees.

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Mr. OWLES supported the pupilage clause. He said the very fact of the recent Bill doing away with a great number of practitioners in the country, rendered it imperatively necessary that the profession should provide well-qualified men to take their places, and it was a question to be considered how those men were to be best educated and rendered capable of performing the duties required of them. His experience of young men from college showed a most lamentable want of elementary practical knowledge ; and therefore, although the Council had not pledged themselves to put in force every clause which the new Charter would authorise, he ventured to say that this was one of the clauses which they believed to be absolutely necessary.

Professor WILLIAMS said the whole matter lay in a nutshell. Every one of the schools objected to the pupilage clause. If, however, the Council would adopt the motion which had been brought forward by Professor WALLEY, namely, to examine the students orally and theoretically first of all, and afterwards to admit them to a practical examination, taking care that no man entered the profession without a thorough practical knowledge, and if he passed that examination to give him his diploma, whether he had been with a veterinary surgeon or not ; but if he failed, then to tell him to go either to a college or to a veterinary surgeon to obtain his practical knowledge in any way he pleased, and then come back. If that proceeding were adopted instead of this Supplementary Charter, then all the feeling of irritation between the schools and the college would be done away with, and they would work together harmoniously for the general advancement of the profession. The schools had supported the Royal College in all its reforms during the last few years, but they did feel now that the Council was going too far, and in fact they would do all that they could to prevent the passage of the pupilage clause. Speaking from his own experience, the men who had served a pupilage with a veterinary surgeon were generally the very worst students that came to a college. They came with habits and ideas formed, and had always to unlearn very much before they could begin to learn, and he generally found they were the very worst students. With these few remarks he wished to enter his protest against the pupilage clause.

Professor WALLEY said the great mistake made by practitioners was that they did not want their pupils to know anything about practical matters. For his own part, and he believed other teachers were in the same position, he would never persuade a man not to learn practical matters : what they wanted simply was to avoid the rock upon which they were about to split of passing a compulsory pupilage clause. His advice to students was to see as much practice as they possibly could, and make what arrangements they could for themselves with practitioners before obtaining their diploma. Some of them had seen practice for several years before coming to college. Though he would rather have them fresh and learn something of theory, and get into habits of study before going to see any practice, he agreed that they should see practice before obtaining their diploma ; but he objected to this compulsory pupilage.

Mr. HELMORE was very much surprised to hear the professors say that the man who had served his apprenticeship was the worst pupil. His own belief was that whatever a man had seen in the way of general practice must be beneficial to him in commencing the practice of his profession ; it would give him that confidence which, of course, employers of veterinary surgeons would very soon discover, for they were very good judges as to whether a veterinary surgeon knew his business. Looking, however, to what they had heard as to heartburning that had been caused between the Council and the colleges, he thought they might fairly ask that the Council for the present would suspend the idea of getting this Supplementary Charter, and not endeavour to enforce it against the will of the professors, who had worked har-

moniously with them for several years. He hoped that the point would be conceded.

General Sir FREDERICK FITZWYGRAM said he was thoroughly opposed to the pupilage clause. It was the business of the schools to educate their pupils properly, and it was the business of the Council to see that the schools did properly educate their pupils, but not to undertake the work of the schools. He had always contended that the schools ought to give a thorough practical instruction, and he saw no difficulty in their so doing. He was sure that if they opened the question of pupilage to the thousand men who had just been registered, they would place their pupils in a very disadvantageous position. He would second the amendment that the Report be adopted less the pupilage clause.

The PRESIDENT said, with reference to the Supplemental Charter, they had only heard one side of the story. For the last hour the opponents of that charter had been fighting a shadow. The Council had not imposed pupilage ; they simply meant to ask for power if necessary to impose pupilage ; and he thought that the profession should have the power to carry out the great object of furnishing practitioners to the public and guaranteeing that they were competent men. All that was done in the Supplemental Charter was to ask for that power. The Council had not decided to impose pupilage. The Council was elected by the profession, and if the profession had no confidence in those whom they elected, they had better abolish the Council altogether. The Council, he thought, must be the best judges of what was necessary for the profession. The schools were largely represented upon it—every matter brought forward was thoroughly discussed ; therefore, if the profession elected the best men they could find to serve upon the Council, and if the Council decided that it was necessary for the welfare of the profession, and the protection of the public, that a period of pupilage should be imposed, then he would say give the Council that power—that was all they asked for in the Supplementary Charter. He thought that on professional matters they ought to be governed by the majority of the profession, and believed it was derogatory to the position of the Council, and most damaging to the interests of the profession, that an insignificant minority should try to over-rule the conclusions of the majority. His opinion was that whatever the majority of the Council arrived at should be carried out. Three petitions had been presented against the charter—two from Edinburgh, and one from Glasgow. With the Glasgow petition no one could find fault, and of the Edinburgh petitions one came from the Highland Society and one from the Town Council. In those petitions he found an objection against pupilage to this effect—that it would in all probability have a pernicious influence on the morals of the students. When such a slanderous aspersion was cast upon members of their profession, it was really time to protest. Those two public bodies in Edinburgh had been impressed with the idea that a practitioner, a member of the R.C.V.S., was not a proper man to entrust a young gentleman to, simply because he would not look after or would injure the morals of his pupil; and that, he repeated, was a slander on the profession. When he first saw those petitions he must confess his blood boiled with indignation, for a more unfounded aspersion upon a body of professional men could scarcely be made ; and if those corporations had inserted these slanders at the instance of members of their own profession, then he thought serious notice should be taken of it. If the Council were satisfied that the graduates of the Royal College were competent to practise their profession, then the pupilage would be unnecessary ; but he very much doubted whether the necessary practical knowledge could be obtained at the schools. Almost every week he heard that young men going to practise in the country were found deficient in the knowledge of the diseases, and the manipulation of cattle

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and sheep. And when that deficiency was confessed by a school which recently had made great advances, what could they expect from other schools which had not the same advantages? With regard to the increase in the fees, twenty guineas was stated as the maximum, but it was nowhere stated that that maximum would be imposed. In 1844, when the fees were fixed at ten guineas, there was only one examination; now there were three, and the number of examiners and expenses of examinations were very greatly increased. Besides that, the Royal College had to protect the practitioners in the pursuit of their profession, and the graduate must pay for that protection, and that could only be provided by increasing the fees. The Royal College must also have funds to meet its always growing expenses, and there was no way of getting them except from the graduates. The case was exactly the same in the medical profession. With regard to the building, he could assure Mr. Mayer that no chance would be lost of pushing forward the claims of the Royal College, so far as assistance from the Government was concerned. They were entitled to some assistance, and he was in hopes that they would obtain it. In the meantime he thought they had sufficient funds to enable them to look forward to a very early realisation of their wishes, and at any rate to make a start in the matter of a building. The programme of general education examinations was elementary in the last degree, but still, it was a commencement, and it was in the hands of the Council to increase the standard as occasion might require. He thought the profession ought to be congratulated on that step, for it was a step in advance to be able to say that the Royal College had taken the matter of general education into its hands, and that in a very short time they would be able to say that their standard of requirement was as high as that of any other professional body. With regard to examiners, he believed that if they could not find examiners in their own ranks they were not worthy to teach. He thought they had made too much of specialists, for he believed that a practitioner was far better able to test the knowledge that students should possess with regard to the practice of veterinary medicine than any specialists, who had seldom, if ever, studied the pathology or physiology of domesticated animals. With reference to the question of affidavits from members of the Royal College, it should be mentioned that the Council had the greatest difficulty in finding what was right and what was wrong. The majority of the protests that came in were founded upon hearsay evidence. After the existing practitioner had taken an affidavit, they could not merely set hearsay evidence against that affidavit. They required oath for oath if possible, and in every case the members of the Royal College had an advantage, when it was possible to give it them. The remedy was in their own hands, and he hoped that gentlemen would not be backward, if they found any such cases, to report them to the Council.

Professor WALLEY said that he was present when both the petitions to which the President had referred were discussed, and so far as he knew, they contained nothing with reference to the morality or immorality of students. If such a question had been introduced, he could only express his sorrow, for it certainly had not been introduced with his consent.

Professor WILLIAMS said he was present at the meeting of the Highland Society, with Professor McCall and Professor Walley, and the question of morality was never introduced to them in any shape or form. He would ask those who stated that there was no practical teaching at the colleges to make themselves better acquainted with their inner working, and then he was sure they would not make such strong assertions as they had heard that day.

The amendment—"That the report be adopted, with the exception of that portion which refers to the Supplementary Charter"—was then put to

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the meeting and lost, twenty-one voting in its favour and twenty-six against.

The resolution for the adoption of the report was then put and carried, thirty voting in its favour and sixteen against.

THE ANNUAL DINNER.

The Annual Dinner of the Royal College took place at Freemasons' Tavern, and was largely attended, among the guests being Col. Milne-Home, M.P.; Col. Kingscote, C.B., M.P.; Dr. Cameron, M.P., L.L.D.; L. Peel, C.B.; Dr. Farquharson, M.P.; Dr. Thin; Dr. Townsend; Col. Blundell, D.A.A.G., Horse Guards; Capt. White.

SPECIAL MEETING OF COUNCIL, HELD ON TUESDAY, MAY 22ND, 1883.

G. FLEMING, Esq., in the chair.

Members present:—General Sir F. Fitzwygram; Professors J. Wortley Axe, G. T. Brown, W. Pritchard, W. Robertson; Messrs. F. Blakeway, E. C. Dray, G. Fleming, T. Greaves, J. Harpley, H. R. Perrins, R. Reynolds, A. H. Santy, H. L. Simpson, P. Taylor, W. Whittle, F. W. Wragg, H. T. Batt, and the Secretary.

The SECRETARY read the notice convening the meeting.

The minutes of the previous meeting were taken as read and confirmed.

Election of President.

Mr. DRAY said he had once more the pleasure and privilege of proposing a gentleman to fill the responsible duties of president of the Royal College of Veterinary Surgeons. They must all acknowledge that for the last three years that post had been worthily, ably, and justly filled by Dr. Fleming, and that no commendation was too great for his eminent services, for he had by his exertions not only raised the dignity of the Council's proceedings, but had benefited the whole profession. Why had he been so successful? Because he possessed an ability to fit him for the office almost unique. He also possessed self-confidence, and that inspired confidence in others; and besides that there was in him a combination of rapidity and accuracy which had made him one of the most remarkable presidents of their time, and had reflected lustre upon the College. His life was wrapped up in duties to the Council and the profession, and his industry was marvellous. Possessing these attributes, he thought they ought not to hesitate a moment, but to re-elect Dr. Fleming as president of the Royal College of Veterinary Surgeons. He had made fresh alliances and friends to promote the extension, improvement, and reform of their institution. He might cite precedents for the action he was taking. In the time of Richard I. a gentleman was elected Lord Mayor of London twenty-five years in succession, and there were many societies and institutions where, when they had such a competent man as Dr. Fleming, they re-elected him. The case of provincial mayors was another illustration, they often holding office for ten or eleven years. He hoped that his motion for the re-election of Dr. Fleming as their president would receive the support of the Council.

Mr. SANTY seconded the motion.

Mr. GREAVES thought they were rather ignoring the provincial veterinary surgeons. He had been a member of the Council for about twenty years, and it had been an understood thing that provincial and metropolitan veterinary surgeons should be elected alternately to the Presidentship. For the last seven or eight years the provincial men had been ignored, and he thought they had a right to complain. Although he could confirm every word

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that Mr. Dray had said, for there was no man who respected Dr. Fleming more than he did, yet at the same time he thought they were setting a bad example, and were keeping back many good men who would otherwise come to the front. Although he objected personally to this being repeated so many times, at the same time, if there was no other person prepared he should give Dr. Fleming his vote.

Dr. FLEMING said he felt some hesitation in saying anything at this crisis because the great honour they had already done him by repeated election, showed the high esteem in which he was held. He had accepted that honour with the greatest pleasure, and to the best of his ability had carried out the duties of the chair. He would leave the matter entirely in their hands. He had never moved or asked any support in the nomination for the Presidentship; it was a matter which should be in the hands of the Council, and if they could get the best man in the chair they should certainly have him there. If they thought it was absolutely essential that he should occupy the chair another year in the promotion of the interests of the College, he would gladly accept the office, but if they decided they could dispense with his services he would heartily support any President whom they might elect. If he consulted his own feelings he should certainly decline office; but he had never consulted his feelings when it had been a question of the benefit of the R.C.V.S., and he did not intend to consult them on that occasion.

No other nomination being made, the Council proceeded to the ballot, and in the result Dr. Fleming was declared to be elected.

The PRESIDENT in thanking the Council for the great honour again conferred upon him, said he must first tender his thanks to those loyal members of the Council who had supported him in the arduous duties of the past three years. Those years marked an immense step in advance, and that was chiefly due to the great assistance and encouragement he had received from the Council. In the year about to commence there was much work to be done, and he should trust to the same loyal support which he had hitherto received. He believed they were now in the right track, and he hoped that at the close of the year they would find that they had strengthened their position and improved their basis for future work.

Election of Vice-Presidents.

The following gentlemen were nominated:—Messrs. Broughton, Cartledge, Cartwright, Dun, Hills, McCall, Martin, Robinson, Simonds, Walters, and Woods.

Six vice-presidents had to be elected, and the result of the ballot showed that the selection had fallen upon Messrs. Cartledge, Walters, Woods, Cartwright, Simonds, and Dun.

Election of Treasurer.

The PRESIDENT proposed the re-election of the gentleman who had so well filled the office during the past year. The duties of the treasurer were, he was happy to say, increasing every year, and as they grew they were performed with all the more precision and accuracy. He was sure, in asking the Council to re-elect Mr. Dray, he was only paying him a compliment in saying that he had done his duty so well as to justify it.

Mr. WHITTLE seconded the motion. He was sure that no one could have been more attentive to the duties of his office than Mr. Dray had been.

The ballot was taken, and Mr. Dray was declared to be re-elected.

Mr. DRAY said he was very much obliged to the President for the very kind remarks he had made relative to his re-election. Certainly, his duties had increased, and he should not be sorry if they increased still more, and if the finances of the College followed their example.

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Election of Secretary.

Mr. DRAY said, as he had so many opportunities of witnessing the exertions of their secretary, he had very great pleasure in proposing his re-election. His fidelity and his unceasing attention to his duties were remarkable. They could not have a better secretary, and he, therefore, had great pleasure in proposing that Mr. Hill should be re-elected.

Mr. BLAKEWAY seconded the motion.

Mr. Hill was declared unanimously elected.

The SECRETARY having briefly responded, the Council adjourned.

The proceedings terminated with a hearty vote of thanks to the President.

CENTRAL VETERINARY MEDICAL SOCIETY.

AT the meeting of the above Society on April 19th Mr. Sheather's essay on "Contraction of the Foot" was the subject of discussion. Mr. J. Woodger occupied the chair. The other Fellows present were Messrs. H. K. Shaw, J. Rowe, J. Broad, Arthur Broad, C. Sheather, F. G. Samson, W. Hunting, A. Broad, W. Roots, A. B. Daniel, J. Hall Brown, and G. R. Dudgeon.

Mr. A. BROAD asked the essayist whether he would not ascribe the greater number of cases of foot contraction to navicular pain. He was well aware that contraction followed resting of the limb, but had not noted its occurrence from simple inactivity, without pain.

After Mr. WOODGER had remarked upon the absence from the essay of any reference to navicular disease, Mr. Sheather said he had purposely omitted it, thinking that subject, if discussed, should be brought forward separately, and fully entered into: at present he wished to consider primary contraction. The general idea was that contraction was a sequence of navicular disease, and did not itself cause lameness. He thought, on the contrary, that it did so, and that frequently, without the presence of any disease at present recognised, we had cases of contraction of foot with consequent lameness.

Mr. SAMSON, alluding to the possibility of one foot being congenitally smaller than the others, said he had under his notice at the present time a five-year-old horse with one fore foot disproportionately small. The disparity was first noticed when the colt was seven months old. The heels were very upright, and the foot strong; there was no lameness, yet biniodide of mercury blisters had been applied, under the idea that there was disease, and he was of opinion that lameness would result if the horse were worked upon the London streets and roads. His general idea of the proper treatment for contracted feet was cold water application, standing on flat pavement, and shoeing with short tips.

Mr. HUNTING, from his recollection of the essay, gathered that it was laid down that the causes of this defect were many. It was, he said, desirable to distinguish the physiological causes from the pathological. Before a horse was shod the feet were much wider. Although we should not therefore put down shoeing as the cause direct of contraction, yet indirectly it was a cause, through the artificial conditions in which it compelled the foot to be placed. Another predisposing point alluded to by the essayist was the dryness and heat of the stable. Dryness does favour contraction: we had only, he said, to compare the expanded hoofs of horses reared in moist climates with the upright narrow feet peculiar to horses in hot, dry countries. He looked upon a disproportionate smallness of foot as due to disease. If both fore feet were narrow he should not consider it unsoundness, provided that the hind feet were similar in shape; but as one means of determining the significance

of a contracted foot he would pare the foot and observe the course and direction of the horn fibres. He did not believe that contraction preceded and caused disease of the navicular joint; and, as evidence that contraction was due solely to resting the limb, he stated that, after unnerving for navicular lameness, the foot gradually assumed a more natural shape.

Mr. ROWE had noticed that feet sometimes appeared to contract, from neglect of the farrier to lower the wall at the toe, which then gradually became elongated, making the foot long and "blocky," and bringing the heels closer together. He had wondered what effect the gutta-percha pads now so much in use would have upon horses' feet, and gave some results of his experience of different kinds of patents of this sort. He advocated "springing the heels" as a means of obviating contraction.

Mr. SHAW agreed with the essayist that the deformity in question was often caused by horses remaining idle. He deprecated the use of pads, and stated that, in his opinion, the abuse of cutting and rasping the foot on the part of the shoeing-smith greatly predisposed to contraction.

Mr. WOODGER said that, in the main, he also agreed with Mr. Sheather. He did not believe that horses were ever foaled with one foot smaller than the other. He knew two colts which it was supposed had this deformity at birth; but it was not so: they had been turned out to grass quickly after being weaned, the ground was sloping, and while feeding they acquired a habit of bending the off leg invariably, and in time the off foot of each colt became much contracted, the flexor tendons also suffered from the same defect, and at last incurable lameness supervened. He said it was his opinion that contraction might follow any disease which caused resting of the leg.

Mr. SHEATHER, in allusion to points touched upon, said that he found that the feet affected in the navicular joint were not contracted to begin with, but were, on the contrary, good round feet: they became altered in the manner indicated as a result of the long-continued resting during treatment. He also stated that a horse, if resting in the stable for an inordinate time, gets his feet contracted, or, as it were, in a state of atrophy, and that lameness is induced when he is put to work, the hoofs not being enabled to expand in response to the pressure from above upon the parts within. In comparison with the foot, he referred to atrophy and changes of size affecting a muscle, a structure not closely surrounded by an unyielding material. He considered it possible that a foal might have one foot small at birth, but that in many more cases there was some trivial cause overlooked. If when one foot was smaller than the other it was well-shaped, and the horn fibres did not seem twisted, he would consider it sound. He disapproved of blistering the coronets as a remedy in "contraction," and agreed with the ideal outline of treatment sketched by Mr. Samson, preferring it, he said, to that actually practised in the case he quoted. Though the application of cold water was beneficial, he preferred to alternate hot linseed poultices with the cold douche, the time of application of the latter being much shorter than the time allowed for the poultices.

While dilating on the subject of the use of pads of various kinds, he instanced a case in which, through the pad being allowed to project too far below the level of the shoe, the amount of pressure upon the sole was so great as to weaken the union of sole and wall; the horse was accidentally killed, and it was found, after one of his feet had been soaked, that without any pressure being used the sole became quite detached from the wall.

Mr. WOODGER then gave some particulars of a case of Ruptured Heart in a horse. He said the patient suffered from congestion of the lungs, and in addition to the pathognomonic symptoms of that malady he observed an intermittent, irregular pulse, at the rate at first of eighty or ninety beats per minute; improvement gradually took place, and normal respiration was.

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resumed, but an irregular intermittency of pulse remained, and he advised the owner to part with the horse; this was done, but a day or two after sudden death resulted while the animal was in the stable. The right auricle was found ruptured in two places. There appeared to be no disease of the valves or muscular fibres. He attributed the mortal injury to increase of pressure upon the auricular wall in consequence of pulmonary obstruction.

Mr. HUNTING then read the following essay:—

Bent Legs; their Significance and Cause.

There are two conditions of the limbs which I include under this term, and to which I wish to draw your attention. Horsemen recognise the one as "over at the knee," the other as "over at the fetlock." In both the anatomical change is the same, viz., a partial flexion of the joint with no articular disease, and some deviation from their normal relative positions of the bones above and below the joint. This condition varies in degree from the slightest deviation from the correct line to a state in which the most striking deformity is produced. It may exist as a permanent alteration in the form of the limb, and it may be merely temporary, gradually and slowly disappearing. We find "bent legs" in horses of all kinds and ages. Sometimes it is unaccompanied by any disease; usually, however, some part of the limb gives evidence of painful disease, or it may be merely evidence of the recent existence of a painful disease or injury. The hind legs are comparatively seldom affected; and it is worth while remarking that when they are the accompanying disease is above the deformity, whereas in the fore legs we usually find any accompanying disease below the bent part. It is not uncommon to find in a hind limb a fetlock "shot over" and a spavin on the hock. It is still more common in a fore limb to find a bent knee and a diseased navicular bone. For convenience, I will now disregard the hind limb, and apply my remarks merely to what are termed "bent knees." Sometimes only one leg is affected, sometimes both. When only one is affected it is almost positive evidence of the existence of disease in some other part of the leg, and that of a painful nature, and not of recent origin.

It has been said that foals have been born with bent knees. I never saw one; in fact, I never saw bent knees in a horse that had not done work or had not met with an accident. Concerning, then, the congenital origin of bent knees, I can only say that as animals may be foaled with five legs, I am not prepared to deny that they may be born with bent legs.

No cases are more common in the horse than accidents and diseases of the foot, accompanied by great pain. When they are of short duration we seldom notice any "going forward at the knee," either as an accompaniment or as a sequel. When, however, foot cases are protracted and painful, and lameness of even slight intensity exists, bent knees are a common sequel. Few, if any, old cases of navicular disease can be found without bent knees. Protracted cases of "sand-crack" lead to the same condition, as also do cases of corns and other injuries. The cure of the corns and "sand-cracks" is always followed by improvement in the position of the knee, and usually, if care be taken, by complete restoration of the position of the limb. In cases of navicular disease every one must have noticed the remarkable manner in which bent knees improve or disappear after neurotomy. The worst case of bent knee I ever saw was in a grey horse that had trodden upon a large nail, inflicting very severe injury to the foot. For months no weight was placed by the animal on the injured limb. When the wound in the foot had healed, and all pain ceased, it was found that the knee could not be straightened. Complete flexion could be made, and no disease of the joint detected. The only explanation of the condition was that the flexor

tendons had contracted, so as to adapt themselves to the new angle formed by the metacarpal and radial bones. The treatment adopted was to turn the horse out to grass with a shoe on the foot of the deformed leg, supplemented by a projection at the toe having an upward curve. The shoe was periodically removed, and the curved projection adjusted to the action of the animal. In the course of a few months the leg was nearly as straight as the other, and quite as sound. The effect of the treatment could only be to put a strain on the flexor tendons during progression, especially at the moment during which the toe revolved on the ground. To this gradual and frequent stretching the tendons yielded.

It may be stated as an anatomical truism that the length of a tendon is exactly proportioned to the distance between its place of insertion and its point of origin, and it is an equally true physiological fact that the length of a tendon varies as that distance varies. Just as a bow can only act when its string is at tension, just so a muscle can only contract effectively when its tendon is "taut." So soon as, by an alteration in the position or angle of two bones, a tendon becomes relaxed, so soon nature commences to contract it to its new conditions. Were this not so, a very slight deviation in the relative position of two bones would render useless all the muscles attached to them. In the case of the grey horse I have just referred to the flexor muscles were able to flex the limb as usual; but had not their tendons contracted, the action of the muscles would simply have been expended upon a relaxed tendon, and their power never have been transmitted to the bones.

This contraction or shrinking of a tendon is a passive and healthy action; it is a physiological alteration, not a pathological change. It is a secondary condition, dependent upon some previous change, and shonld suggest our looking for some primary active cause which may require professional treatment.

Anything which causes a horse to rest his leg with the knee bent must relax the flexor tendons. If the position be continued a gradual and passive contraction of the tendons follows, and a more or less permanent alteration of the line of the limb takes place. Pain in the feet, in all its varying degrees of intensity, acts in this way: to relieve the organ, the heel is raised and the knee thrown forward, consequently a relaxation of the flexor tendons results. So general is the connection between foot-lameness and bent knees, that I venture to say that in seventy-five per cent. of cases the two co-exist. I go further, and say that the mere existence of bent knees is of itself *primâ facie* evidence of foot-lameness.

One of the most interesting and instructive illustrations of this came under my notice not many years since in London. A friend of mine had at that time veterinary charge of a large stud of horses. Two years only had passed since they were purchased—a sound, young lot of horses—when it was noticeable that a large number were going over at the knees. Examination showed that about seventy per cent. were bent, many in a most marked manner. My friend reported that the cause was a bad system of shoeing, and I was afforded an opportunity of testing his opinion. In nearly every case corns either existed or had existed. In many cases corns were present on both heels of both fore feet. In no case could any other cause be detected. Similar horses did similar work in dozens of places, but remained free from bent knees. In only one thing were these horses peculiar—in being shod on a system rigorously carried out, and which must inevitably lead to injury. The system was to lower the heels as much as possible, with a view to frog pressure; to shoe short, for fear a shoe was pulled off; and to shoe close, because the fine nail-holes rendered it necessary.

Now I submit that no three rules could be framed so likely to result in

damage to the heels of the foot. Some few of these animals I was enabled to trace, after they were sold, as uselessly lame and deformed. One very bad case I can refer to as, when properly shod, becoming again sound, and nearly straight on his legs, although continuing to work hard in a laundry van. Just note the sequence in this huge experiment of cause and effect. The practice was, over-lower the heels, shoe short, and shoe close; the result, corns and bruised heels. The next stage, tender and lame feet, followed by bent knees and contracted tendons. The mischief, however, did not stop here: work still went on, and the knees became more bent—not only was the metacarpal bone altered in position, but the pasterns were thrown into the perpendicular, and ring-bones appeared in numbers probably never before witnessed in a stud of the same size.

In this case cause and effect seem to me so clear as to leave no room for doubt. In some bad cases of contracted tendons tenotomy has been performed, and, providing that adhesions between the tendon and its sheath do not exist, no difficulty is experienced in extending the joint. I mention this merely to remark that ligaments do not apparently contract when they are relaxed by the continued flexion of a joint. The power of gradually shortening or lengthening possessed by a tendon seems, then, not to reside in ligaments; and this confirms me in my statement that such property is only possessed to enable muscle to act effectively. I have said there are cases of bent knees with no apparent disease accompanying them. Such cases I take to be due to excessive work. The defect follows from hard work, through precisely the same steps as in the other cases. The sequence, I take it, is hard work = tired muscle, relaxed muscle = falling forward of knee; this continued, we have the gradual contraction of tendon that must follow the altered position of the knee. How many of such cases have been blistered or fired in the region of the tendons? Will anyone say why, when such treatment is adopted, the operator should not be proceeded against for cruelty to animals?

In conclusion, just one word concerning hind legs. Here the flexion of the joint analogous to the knee does not relax the flexor tendons. When a horse rests a hind leg from weariness or pain, and the flexor tendons are continuously or constantly relaxed, the joint that is thrown forward is the fetlock. Should contraction follow, the pastern bone is straightened and the fetlock thrown forward. We see this condition as the result of sand-crack sometimes, but most commonly in association with spavin. An alteration of the angle formed between the metatarsal bone and the tibia, if it could occur, would not be very noticeable; besides which, the hock is so related to the stifle joint that the angle of one cannot be altered without a similar alteration of the other. The relative position, then, of the metatarsus is more stable than that of the metacarpus, and consequently a "shot fetlock" behind is a more conspicuous deformity than one in front, owing to nearly all the deviation being in the pastern.

ALFRED BROAD, *Hon. Sec.*

SOUTHERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

ON March 30th, the annual meeting of this association was held at Laker's Hotel, Redhill. The President (Mr. G. Fleming) took the chair, and there were also present Messrs. J. B. Martin, of Rochester (hon. sec.), N. Penberthy, R.V.C.; Elston Edgar, Dartford; F. W. Wragg, London; R. A. Stock, Lewes; E. A. Hollingham, Redhill; F. Hogben, Folkestone; J. E. Elphick, Ash; F. R. Ingersoll, P. A. Rock, M. M. Rock, J. Gibbs, H. J. Hancock, James Roe, etc.

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Mr. MARTIN read several letters and telegrams from members expressing regret at their inability, through business engagements, to attend this meeting, and their good wishes for the continued and increased prosperity of the association. The Hon. Sec. introduced the question as to the desirability of joining the National Veterinary Association, remarking that no doubt by organisation all over the country, and being properly represented at the National Council, the status of the veterinary profession would be vastly improved.

The PRESIDENT remarked that the importance of such a body as a National Association had been largely manifested in every profession, but perhaps it had been most marked in the British Medical Association. The National Veterinary Association had been established on the same footing as the British Medical Association, which had a large number of local associations, and met once a year at different places, when not only political questions were treated, but the more important professional matters were discussed at great length, and by the ablest men in the medical profession. One great object which was gained by a National Association, was that its opinions were usually respected as representing the opinions of the entire body, and, therefore came with very great weight upon the public mind. Then it brought members of the profession together, and cemented the bonds of friendship in the strongest possible manner. There was no doubt the veterinary profession, when they reflected upon the great animal wealth of this country, and the very high rank which our cattle took all over the world, and also the important sanitary questions which came before the profession, might expect as much from a National Association as had been derived from the British Medical Association. The fact of the association having decided to hold its first meeting in London would give the movement an excellent start. Within the last twenty years their profession had been rising very rapidly indeed in importance. If they showed that they were worthy of confidence, and did their utmost to protect and advance the public interests, they might rely upon it the public would assist them in their efforts. In conclusion, the President commended the National Association to the members present as being worthy of their support.

Mr. PENBERTHY explained that the title of the association—"The National Veterinary Association"—was decided on at a meeting of representatives of various associations held in January last. Every member of the Highland Society of Scotland had had a circular asking him for his support, and the response had been quite up to anticipations. It was proposed to hold the first meeting of the association on the day following the annual meeting of the Royal College of Veterinary Surgeons, and the commodious room of the Society of Arts had been secured for the purpose. A profession so numerically small as the veterinary profession, required unanimous effort, if any real benefit was to accrue from such a movement as this. It was his object at this meeting to bring the National Association before their notice, and he had no doubt it would have their support.

The HON. SEC. thought it better to make a formal proposition.

The PRESIDENT accordingly proposed, and Mr STOCK seconded, a resolution, which was carried unanimously, expressing the desire of this association to aid in the promotion of the objects of the National Association, by giving the same its cordial support, and all those present become members, the subscription being half-a-guinea per year.

The next business was the nomination of representatives to serve on the council of the National Association, and on the motion of the HON. SEC., seconded by the PRESIDENT, it was resolved to support Mr. Woodger (president of the Central Society, London), Mr. Wragg, and Mr. Barford, of Southampton.

Mr. Stock and Mr. Elphick having exhibited some interesting morbid

specimens, and a discussion having taken place upon them, Mr. EDGAR proceeded to read a paper on "Swine Fever," in which he dealt with his subject in a most exhaustive and lucid manner, minutely and carefully treating of every stage of the disease.

The PRESIDENT said he was quite sure they would all agree with him, that the very scientific paper which they had just heard read deserved their very warmest thanks. It was just about as good a description of the malady as could well be drawn up in such a short space. Personally he had listened to the subject with the greatest amount of interest, because he had the good fortune, when attached to the Royal Engineers at Chatham in 1875, to make Mr. Martin's acquaintance, and he had the opportunity, through Mr. Martin's kindness, of seeing very much of the disease and making a number of *post-mortem* examinations. What struck him at the very first *post-mortem* in 1875, was the absence of those characteristic lesions which were found in human Typhoid Fever. He saw Dr. Klein some time afterwards and he quite agreed that the malady, although in some respects it resembled human Typhoid, yet in other respects was different. With regard to its relations with other diseases, he confessed he was at a loss. They knew that of all the animal species the nearest to the human species in organization was the pig. He himself entertained the opinion that this Swine disease distinctly belonged to the porcine species. He could not mention any analogous disease, except it be the Human Plague, which in many of its features it resembled, while in other points it was widely divergent. The appearances of the malady had been described by the essayist most accurately. He (the President) could not bring himself to think that it was a variolous disease, and he was sure, as far as one could judge, that it was one which was peculiar to the porcine species, though it might be transmitted to other species. The essayist had shown them that the disease had been transmitted to the rabbit, and that it could be transmitted to the fowl. It was most important that an investigation should be made of this malady, now that they knew there were methods of cultivating the poison of disease, which rendered that poison its own antidote. The remarks of Mr. Edgar were amply justified by his pathology. They ought to encourage the study of pathology. The Government did not assist them, but he was still in hopes, with our Association and in other ways, that the time was not far distant when they should be able to pursue investigations largely assisted by Government or by some of the wealthy bodies in London. The President pointed out the extreme importance of the malady from a sanitary point of view. There was no evidence, so far, that the flesh was obnoxious ; but, looking at the matter from a practical point of view, they could only consider the danger connected with every pig that exhibited the slightest trace of disease. With regard to inoculation, their means of disinfection were so limited and imperfect, and the difficulty was usually so great, that they could not always rely upon the sanitary measures generally employed being successful. The removal of the fæces from the yards and other matters in the drains, almost pointed out the impossibility of stamping out this disease by known methods. He should like to see in every district large kilns for the destruction of the carcases of diseased animals by fire. No doubt the ancient Jewish method of cleansing by fire was the best. There should be large cremators, in which the carcases of all animals that died of contagious maladies should be destroyed, to avoid the germs of the diseases escaping. In conclusion, the President said he trusted those present, as practical men, would favour the meeting with their opinions as to this malady.

Mr. HOLLINGHAM said he had seen a disease lately which seemed very similar to Swine Fever, only that it was not a fatal malady. There was a similar redness to that which had been described by Mr. Edgar. The only

difference he could observe between the two diseases, was that there was no purging. The appetite was entirely lost, and when the animal was moved about and bustled at all it would tremble very much and show signs indicative of pain. The breathing was very hurried, and the temperature 106° or nearly so. He attended these cases, and the animals improved, and ultimately recovered. There was great thirst.

Mr. STOCK said he had had several cases like those referred to. Where he was not quite certain, he had isolated the animals. He attributed the complaint wholly and solely to the food—perhaps in giving salt or soda, and causing a slight irritation of the stomach and intestines.

Mr. MARTIN stated that he had seen a great deal of Swine Fever. Mr. Edgar had so exhausted the subject, and dealt with it in such a clear and practical manner, that he did not think they could discuss it in any other way. They ought to congratulate themselves upon having a member among them capable of reading such a paper. He had read Dr. Klein's paper of 1877, but he (Mr. Martin) did not believe he had seen in any of their papers such a minute, scientific, and practical description as Mr. Edgar had given them. To them as practical men—and, in fact, to all practical veterinary surgeons throughout the country, particularly in the country districts where their opinions were sought—the paper would be of the utmost importance to them to refer to. As to the scientific portion of it, they could not discuss it, and they must leave it to those who had sufficient time to examine this matter microscopically. He had himself differed from some men occasionally in those cases where one had to decide at once, and where one did not have the opportunity of making a proper examination. You were to decide for the benefit of the magistrates whether it was Swine Fever or whether it was not; and sometimes the opinions of the profession clashed in this way, but they had better err on the right side, and that was to kill the animal. In order to stamp out the malady, this was the only means of doing it, where there were any signs of disease. No doubt there had been hundreds of cases in which animals had been destroyed for Swine Fever, when it had not been Swine Fever at all. Typhoid Fever was not the correct term. The Privy Council were aware, as a fact, that in hundreds of cases animals had died or were killed which were suffering from other complaints, such as taking a quantity of salt and other substances, and that their destruction was due to an error on the part of the veterinary surgeons. Some of them might be called in to give an opinion, and where they had given an opinion hastily, and other men were called in afterwards, we know that sometimes the latter were unscrupulous enough to give their opinion that it was not a case of Swine Fever, and they had thus raised their reputation at the expense of others. He had no doubt that Mr. Edgar's paper would be read by all the profession. It would prove a sort of manual of reference to those who had not had the opportunity of studying the symptoms of the disease that some of them had. They should one and all make themselves practically acquainted with the symptoms and also the *post-mortem* appearances, to enable them to form and give a sound opinion upon the malady. In many cases where he had been called in he had been sure it was Swine Fever, but there had been an absence of any redness or any tint on the skin. In the most marked cases of Swine Fever there were two symptoms present: but he was speaking of very mild cases, where there was an absence of any external symptoms, such as this tint on the thighs and other parts of the skin, to guide you in giving a correct diagnosis, unless you had the assistance of a microscope. As practical men they could not spare the time to enter into these minute examinations, but must leave the matter to scientific men who could do so. As regarded purging being one of the symptoms, this had been quite the opposite to his experience; he had generally found the pigs were very costive. Why the public were induced to

give notice of disease was the compensation which was made to them in respect of the slaughtering of their animals. Dr. Klein, in treating the disease, compared it in a scientific way to know the difference between Typhoid Fever in man and pig, but as far as they were concerned they could not determine it in the least. They had not the time that they had at colleges. Perhaps Mr. Penberthy would say a few words.

Mr. PENBERTHY said he endorsed all that had been said by the previous speakers in favour of the paper. The manner in which the subject had been treated had been most thorough, and the paper had largely diverged from the papers which had frequently been brought before the association in special diseases. It had taken up a line of thought of its own, and had suggested something for them to discuss. As Mr. Martin had stated, the most important thing for them to notice was that which had a bearing on every-day practice; in all diseases in which they had the power of slaughtering animals they wanted to know, both for the protection of themselves and the public, the time when to order slaughter and when not to. He thought there was a tendency to turn their attention to what was called the practical part of their wants, for unless they began at the proper foundation they should never arrive at such a conclusion as to know when to slaughter and when not to. Mr. Edgar had thrown out a hint, and asked them to discuss the relation of Typhoid Fever to variolous diseases. He (Mr. Penberthy) must say, as far as he was concerned, he had long considered that Typhoid, or so-called Typhoid, to bear a very close resemblance to what were known as these diseases. The President thought it was not of this character. As to the next matter, that of protective inoculation, he for one perhaps might be considered rather old-fashioned; he thought they must take a great deal of what had come from M. Pasteur with a little salt. Those of them who were reading the medical journals at the present time, would find the English observers did not agree with all points of M. Pasteur's experiments. It had been disputed with respect to Anthrax fluid that it neither produced protective inoculation, nor was it safe to be used in the hands of ordinary observers. There was no reason why any of them should not use a microscope. He was not sure they were not allowed to make experimental studies; he believed the Act allowed an inspector to slaughter one animal to satisfy himself before giving his diagnosis.

Mr. EDGAR: You have power to slaughter on suspicion, on obtaining the consent of the local authority.

Mr. STOCK: It is the owner generally who says, "I have got Swine Fever here," and then the thing has to be settled. You cannot come to a decision within several days, and the pigs might die in much less time, and then you would not get compensation. Did he understand that old animals were equally susceptible to the disease as young animals?

Mr. EDGAR said all ages and breeds were alike liable to contract the disease, were but affected in different degrees. The older the animals the less severely they suffered, and the less was the fatality.

Mr. ELPHICK mentioned a case which had been told to him by a breeder of pigs near Ash, who said he had found the disease to be associated in large towns rather than in the country, and it was a question whether it arose from the food the animals partook, or to the bad, unsanitary conditions in which they lived.

Mr. HOLLINGHAM: It is the opinion of some of our best men that no amount of unsanitary arrangement seems to produce the disease at all.

Mr. EDGAR, replying to Mr. Elphick, remarked that if they said that, they did away with the specific nature of the malady entirely. When fever broke out in a place, and they were unable to trace it, they must not admit at once that it arose on the spot; they must admit their inability to trace it. He did not

admit spontaneous origination in any way himself. It was this question that induced him very strongly to write this paper. Was the disease or was it not a specific malady? He should like to hear the result of that. When they got into the witness-box and contradicted each other, it made one or the other of them look very ridiculous.

The PRESIDENT remarked that with regard to the analogy to, or identity of this disease with the Variola, Small-pox in man was marked by the presence of the pock, so that if they looked upon this disease as Variola they must find some indication of the eruption. There were a number of cases—some of them have no eruption—but they had the same thing in Cattle Plague. The eruption on the skin was not to be taken as conclusive of its identity with or analogy to the Variola. A great deal depended on the condition of the animal receiving the poison and upon the circumstances in which the animal lived, and to a great extent also upon the activity of the virus itself. He believed all zymotic diseases were due to a germ, and that the greatest minds of the age were of the same opinion. It was all-important they should understand the germ theory of diseases. This was the first time in the history of man that they had been able to arrive at a correct idea of the causation of contagious disease. So firmly did he believe that every specific malady had its own peculiar germ, that he did not think anything could change his opinion in that respect. You might as well say you could produce fermentation without the yeast fungus, as to produce a specific malady without its specific germ. Certainly, they must accept every new discovery in science with the greatest care, until it was amply corroborated, and he thought if there was anything better established than another now it was the germ theory of disease. It was a fact that would go a long way to enable them to stamp out these diseases ultimately. It would be of very great importance if the veterinary surgeon could, as no doubt he should, resort to the test of inoculation; and if a rabbit would take it from the pig, and provided the symptoms were well marked, the circumstance would prove of the utmost value to the inspector. He only threw this out as a hint, because they did not know anything of the virulency with which the rabbit was attacked. As to contagion, that must be determined experimentally. Everything in the way of pathology should be tested in the laboratory as much as possible. In their daily practice it was often impossible to trace the source of disease or to pronounce definitely as to its spontaneity. He held with Mr. Edgar that certain diseases were due to bad sanitation; but not so the zymotic maladies.

Mr. ELPHICK said in the case he had mentioned, it was not his own opinion which he expressed, and therefore there was no danger of his going into the witness-box in opposition to Mr. Edgar.

Mr. EDGAR observed that the food was undoubtedly a great source of danger, but it must undoubtedly contain morbific matter to produce the disease. He believed yards had been kept in a dry state for two months and then produced the disease; but it was uncertain. He should think the case reported by Mr. Hollingham was a very mild attack of Swine Fever.

On the motion of the PRESIDENT, a cordial vote of thanks was then passed to Mr. Edgar for his very able paper.

On the proposition of Mr. MARTIN, seconded by Mr. FLEMING, Mr. Wragg was unanimously elected president for the ensuing year. The hon. sec., treasurer, and vice-presidents were re-elected, and Mr. H. Davis, of Blackheath, was elected a member of the association.

On the proposition of Mr. EDGAR, a hearty vote of thanks was accorded to Mr. Fleming for his valuable services as president during the past three years. It was decided to hold the next meeting of the association in June next, at Maidstone. The business proceedings of the meeting terminated

with the usual compliment to the chair. The members then dined together Mr. Fleming again presiding.

NEW VETERINARY COLLEGE, EDINBURGH.

At the present time, when so much attention is being directed to the necessity for increased endowments for the universities, it is worthy of notice that the veterinary profession is making great headway in the city without any Government support. It was a matter of regret that in 1873 the arrangements for veterinary teaching in Edinburgh were disturbed, but the course which Mr. Williams then took has proved a very successful one. The old Gayfield House was acquired for a college, and in 1873 sixty-one students were enrolled. In 1876 the number had increased to 73, three years afterwards there were 104, and during the last winter session 154 were enrolled. With the view of making the teaching staff thoroughly proficient, an extra Chair for Natural History was added two years ago—the first that has been established in connection with a veterinary college in Great Britain. The present building having proved too small for the increased number of students, Principal Williams determined to proceed with the erection of a new college, and ground was acquired in Leith Walk for this purpose, the site being that formerly occupied by the Tramway Company, and some other old buildings which have yet to be demolished. The structure, which will face the main street, will be a large building four storeys in height. On the ground flat are three shops. On the second flat will be accommodated the resident veterinary surgeon and others in charge of the college. The third and fourth flats it is intended to let; one of them it is proposed to make a clubhouse for students. Passing through the entrance, a causewayed road, fifty yards long, will be formed right through the yard to the back gate, which communicates with Montgomery Street. To the rear of the shops in the main building are a public office, consulting-room, and surgery. The remaining parts of the building form three parts of a square, and the erections are two storeys in height. Along the north side on the ground floor are seven boxes for horses, an apartment specially fitted up for bathing the horses, and at the end there is a cow byre. At the east end is a large forge, where a dozen horses may be shod at a time. There is also a chopping and boiler-house. The entrance from Montgomery Place divides the *post-mortem* room from the forge, while along the south side of the square are ten more boxes and kennels, all heated with hot-water pipes. Over this part of the building are two laboratories with retiring-rooms; one of them is fifty feet in length, and is lighted by side windows, as well as from the roof. At the north-east corner on the same floor is a dissecting-room, which will be fitted with all the latest improvements, and is admirably lighted. Over the forge is a large reading-room for students, and in the north-east corner a small class-room, capable of accommodating one hundred students. Next to this on the north side are the bone-room, the museum with gallery around, and adjoining a retiring-room for the professor, while at the end is the largest lecture-hall, capable of holding 250 students. Through all these rooms will be conducted hot-water pipes. A gallery is carried along the north side from which the horses trotted in the square can be seen. The sanitary and ventilating arrangements will be on the most approved principle. The college and buildings cover a large area, and will cost over £14,000, which will be borne by Principal Williams. The works are expected to be finished for the opening of classes in October.—*Edinburgh Daily Review.*

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GLASGOW VETERINARY COLLEGE.

THE winter session of this institution terminated on April 13th, and on the 16th, 17th, 23rd, and 24th the oral examinations of the Royal College of Veterinary Surgeons were conducted within the museum of the college.

The candidates for diploma were also subjected to a rigid practical examination on horses, cattle, and sheep, selected and brought to the college for that purpose.

The Board of Examiners included—Mr. George Fleming, F.R.C.V.S.; Mr. J. Roalfe Cox, F.R.C.V.S.; Professor Duguid, F.R.C.V.S.; Professor Pritchard, M.R.C.V.S.; Mr. J. Vaughan, F.R.C.V.S., London; Mr. W. A. Taylor, F.R.C.V.S., Manchester; Mr. George A. Banham, F.R.C.V.S., Cambridge; Mr. Finlay Dun, F.R.C.V.S., London; Mr. W. B. Walters, F.R.C.V.S., Army Veterinary Department; and Mr. R. Rutherford, M.R.C.V.S., Edinburgh.

The following gentlemen were also present as *ex officio* members:—Principal M'Call, Professors Knox, Cooke, and Macqueen, Glasgow Veterinary College.

The diploma of the Royal College of Veterinary Surgeons was obtained by the following candidates:—Mr. Henry Tweedley, Barrhead; Mr. Job M. Johnson, Belfast; Mr. James Spalding, Blairgowrie; Mr. Alexander Brown, Neilston; Mr. Thomas Greene Sherwood, Belfast; Mr. John Francis Hayes, Portree; Mr. Tom Marriott, Warwick; Mr. James Laithwood, Congleton; Mr. John Reid, Beith; Mr. Alex. Brown, Holytown; Mr. John Holland, Dublin; and Mr. John Baxter, Overtown.

Twenty-four students presented themselves for the second professional examination, of which number twenty-one passed, namely:—Messrs. William Macdonald, Campbeltown; R. H. Gilmour, Ballymoney; Samuel M. M'Conechy, Islay; Archibald Edgar, Port-William; Andrew Stewart, Paisley; William G. Jones, Pwllheli, North Wales; Robert Yates, Glasgow; Finlay Kerr, Glasgow; A. H. Mackeand, Port-William; A. A. Leckie, Dumfries; Alexander Murdock, Drogheda; Alexander Reid, Magheramorne, County Antrim; James Hart, Dromara, County Down; R. D. Dove, Dundrum, County Down; William C. M. Smith, Porkhill, County Armagh; Alexander Paton, Troon; Alexander C. Forbes, Glasgow; Robert Anderson, Holytown; James K. Calderwood, Paisley; R. P. Houston, Tynan, County Armagh; and John Steel, Cumnock, Ayrshire.

Four students were also examined for the first professional examination, of whom the following passed:—Messrs. Alexander Marshall, Glasgow; Joseph Ward and William Ward, Manchester.

Medals granted by the Highland and Agricultural Society of Scotland, Professor Allen Thompson, London; Mr. Robert Walker, of Lethamhill; and Principal M'Call, and certificates of merit by the College, were awarded in the different branches of study as follows:—

Horse pathology (written examination).—Gold medal (Principal M'Call), Alexander Brown, Neilston; silver medal (Highland and Agricultural Society of Scotland), John P. Hayes; first-class certificates, Messrs. Laithwood and Marriott; second-class certificates, Messrs. Spalding, Hirst, and Brown.

Cattle pathology (written examination).—Gold medal (Principal M'Call), James Laithwood; silver medal (Highland and Agricultural Society of Scotland), A. Brown, Neilston; first-class certificates, Messrs. Hayes and Larkin; second-class certificates, Messrs. Holland, M'Nair, and Frew.

Practical examination of horses as to soundness, age, manipulation, etc.—Gold medal (Principal M'Call), Tom Marriott.

Practical examination of cattle and sheep as to age, operations, etc.—Gold medal (Mr. Robert Walker), Harry Tweedley.

A special prize, consisting of a case of instruments, presented by Mr. Campbell, M.R.C.V.S., Kirkcudbright, for the best essay on "Inflammation," was awarded to Mr. John F. Hayes.

Histology and physiology.—Silver medal (Highland and Agricultural Society of Scotland), Mr. Andrew Stewart; first-class certificate, Mr. Jones; second-class certificates, Messrs. Edgar and Dove.

Anatomy (special and comparitive).—Silver medal (Highland and Agricultural Society of Scotland), Mr. Andrew Stewart; first-class certificates, Messrs. Houston, Dove, and Jones; second-class certificates, Messrs. M'Donald, Anderson, Kerr, Mackeand, and Edgar.

Best oral examination on anatomy, physiology, and histology.—Gold medal (Professor Allen Thomson), Mr. Andrew Stewart.

At the close of the examinations the President of the Royal College of Veterinary Surgeons (Mr. George Fleming) intimated that Messrs. Jones, Stewart, Dove, Kerr, M'Donald, Edgar, and Houston had passed with great credit.

MONTREAL VETERINARY COLLEGE.

THE examinations of this institution were concluded by the final oral examination by the Board of Examiners appointed by the Council of Agriculture, consisting of the following gentlemen:—Messrs. F. S. Billings, M.V.; Williamson Brydon, V.S., Boston, Mass.; C. J. Alloway, V.S., Montreal; J. A. Couture, V.S., Quebec; A. McCormack, V.S., Ormstown; Chs. Levesque, Berthier-en-haut, and Dr. Geo. Leclerc. The following gentlemen were present and assisted in the exercises:—Hon. G. Ouimet, Commissioner of Public Instruction, in the chair; supported by Prof. R. P. Howard, Dean of the Medical Faculty of McGill University; Prof. Beaudry, representing Victoria University; Mr. J. M. Browning, Vice-President of the Council of Agriculture; Dr. Geo. Leclerc, Secretary, and Rev. Father Pilot, Messrs. W. S. Blackwood, A. Sommerville, and Casgrain, the Educational Committee of the Council; Prof. Osler, Prof. Daubigny, Dr. Sutherland Baker, and a large number of visitors.

Hon. Mr. OUIMET spoke of the good work done by the College, and proceeded to distribute prizes and diplomas, complimenting the recipients on their success.

The following students passed in the undermentioned subjects in order of merit:—

Botany, Prof. J. W. Dawson, McGill College—Scott, Durfee, Lamb, Mahon, Sparks, Magor, Keys and Abbey.,

Chemistry, Prof. Girdwood, McGill College—Blanchard, Kingman, Ball, Davis, Cross, and Mayo.

Physiology, Prof. Osler, McGill College—Blanchard, Ball, Kingman.

Materia Medica, Dr. James Bell, Veterinary College—Kingman, Bancroft, Blanchard, Ball, Cross, Davis, Klock.

Anatomy, M. C. Baker, V.S., Professor—Brodie, Bell, Clement, Pomeroy, O'Connell, Henry, Duncan, Robins, Bancroft.

Practice of Veterinary Medicine and Surgery, and General Pathology—D. McEachran, F.R.C.V.S., Professor—Bell, Clement, Brodie, Henry, Pomeroy, Duncan, O'Connell, Bancroft, and Robins.

Physics, Prof. Girdwood, McGill College—Lamb, Durfee, Scott, Hoare, Mahon, Magor, Abbey, Keys, and Sparks.

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French Classes.

Botany, Prof. Roy, Victoria College—A. Beauchamp, T. Beauchamp, Brosseau, Fortin, Lapointe, Piche, Rouif, Turcot.

Physiology, Prof. Beaudry, Victoria College—Morin, Labelle.

Chemistry, Prof. Munier, Victoria College—Morin, Labelle.

Obstetrics, Prof. M. Daubigny, V.S., Veterinary College—Crevier, Paquin, Drouin, Pilon.

Materia Medica, M. Daubigny, Veterinary College—Paquin, Crevier, Drouin, Pilon.

Anatomy, M. Daubigny, Veterinary College—Paquin, Crevier, Drouin, Pilon.

Practice of Veterinary Medicine and Surgery and General Pathology, M. Daubigny, V.S.—Paquin, Crevier, Drouin, Pilon.

The following candidates passed the examinations successfully and received the diploma of the College :—Messrs Brodie, Bell, Clement, Crevier, Henry, O'Connell, Pomeroy, Paquin, and Robins.

Prizes.—English Classes.

The following prizes were awarded :—

Seniors—Best general examination in all subjects—Silver medal, the gift of the Council of Agriculture, won by Jas. Brodie.

Practice of Medicine and Surgery—Valuable Microscope, the gift of David Morrice, Esq., won by Wm. Bell ; 2nd prize, A. W. Clement.

Anatomy—First prize. Jas Brodie ; second do., Wm. Bell.

Practical Dentistry—Instruments, the gift of Williamson Bryden, Esq., V.S., won by H. J. O'Connell.

Juniors—*Materia Medica*, H. C. Kingman.

Anatomy—First prize, H. C. Kingman ; second do., M. G. Blanchard.

Practice of Medicine and Surgery—First prize, A. C. Kingman ; second do., E. P. Ball.

Botany—Gift of Prof. Dawson, won by W. F. Scott.

French Classes.

Best general examinations, silver medal, the gift of the Council of Agriculture, won by Fred Paquin ; second prize, valuable instruments, the gift of L. H. Massue, Esq., M.P., President of Council of Agriculture, won by E. C. Crevier.

Obstetrics, the gift of M. Daubigny, won by E. C. Crevier.

Anatomy, the gift of Geo. Leclerc, M.D., won by Fred Paquin.

At the conclusion of the exercises, Mr. BILLINGS, Boston, complimented the Dominion on having in the Veterinary College of Montreal, the only institution of the kind doing honest work on the continent, and they had reason to be proud of having a gentleman at its head who, more than any one else, combined in his teaching and daily life science and practice, and whose honest efforts were devoted to the elevation of the profession.

Professor MCEACHRAN was next called upon, and took advantage of the occasion to compliment the students on their honest hard work during the session, congratulated the successful and sympathised with those who had failed in passing the severe examinations to which they had been subjected. He pointed out advantages of a high standard of education on account of the rapid progress of the profession. No profession holds out, said he, more

brilliant prospects than did the one they now entered, but they must not expect to gain success without a struggle; but by perseverance they were sure to succeed. He wished them all success. He next paid a high tribute to McGill and Victoria Colleges, thanked those gentlemen who gave prizes, especially David Morrice, L. H. Massue, Williamson Bryden, and others, also the examiners, who had come long distances to assist them, the Council of Agriculture and the Government of Quebec for their valuable support, and those gentlemen who had assisted them at the examinations.

Prof. R. P. HOWARD, Dean of the Medical Faculty of McGill, next addressed the students and graduates, complimenting them and their teachers on their success, and indicated that the Faculty seeing the necessity for extending the field of study had decided to add to their College a chair of Comparative Pathology, which they hoped soon to see accomplished. He could say for the Medical Faculty that they had always great pleasure in doing all they could to assist the Veterinary College, which was looked upon by them as one of the most useful institutions in the province.

Prof. BEAUDRY next followed in a similar strain for Victoria College.

Dr. OSLER, J. M. BROWNING, and others followed in remarks eulogistic of the College and its Principal.

The proceedings terminated by a vote of thanks to Hon Mr. Ouimet.

A meeting of the Veterinary Medical Association was held immediately after, when the diploma was conferred on Wm. Bell, Jas Brodie, A. W. Clement, E. C. Crevier, Jno. Henry, T. J. O'Connell, B. A. Pomeroy, Fred. Paquin, Paul Paquin, also on Mr. F. S. Billings and Prof. Daubigny.

ONTARIO VETERINARY COLLEGE.

THE examinations were held on March 29th and 30th. A larger number of students presented themselves than on any previous occasion. Forty-six gentlemen succeeded in passing and obtaining the diploma. On the 30th, at twelve o'clock, the friends of the College assembled to witness the presentation of prizes. Among those present may be mentioned his Honour the Lieutenant-Governor of Ontario, Mayor Boswell, of Toronto, Professor Buckland, Dr. Thorburn, Dr. Duncan, Mr. Elliott, President of the Ontario Veterinary Medical Association, the members of the Board of Examiners, Mr. Henry Wade, Secretary of the Agricultural and Arts Association, and many other prominent gentlemen.

Professor Smith, in opening the proceedings, remarked on the extraordinary success of the College during the past session. The junior class had reached the unprecedented number of eighty-six, when the total attendance was one hundred and fifty.

Dr. Duncan then read the names of the graduates, also the Prize and Honour List. The prizes were presented by the Lieutenant-Governor and other gentlemen.

List of Graduates, 1882-83.

Adair, Harry B., Paris, Kentucky; Addison, James, Newmarket, Ont.; Armstrong, Frank H., Ausable, Michigan; Berry, Vinton A., Marion, Ohio; Blackall, James E., Birr, Ont.; Blank, Cyrus J., Coopersburg, Penn.; Bowen, Elmer E., Tyre, New York; Carter, Robert W., Guelph, Ont.; Courtenay, Edward St. Geo., Waterford, Ireland; Crane, John B., Sharen Centre, Ohio; Dickenson, Samuel S., Zion, Ont.; Dunn, Charles M., Hamilton, Ont.; Fisher, James W., Baillieborough, Ont.; Forbes, Edward R., Toronto, Ont.; Howe, William R., Cleveland, Ohio; James, V. L., Springfield, New York; James, Harry F., Ottawa, Ont.; Jeffery, George P., Toronto, Ont.; Johnston,

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James, Dundee, Scotland; Jones, Robert A., Simcoe, Ont.; Jopling, William, Parkhill, Ont.; Keeler, Jesse R., Harleyville, Pennsylvania; Kerr, Thomas, Wingham, Ont.; McLean, Charles C., Meadville, Penn.; Murray, George, Ridgetown, Ont.; Newton, John, Weston, Ont.; Perdue, John, Orangeville, Ont.; Plank, Mortimer W., Uxbridge, Ont.; Poucher, Marshall M., Oswego, N. Y.; Queen, Tipton J., Salineville, Ohio; Quinn, John F., Edmunton, Ont.; Rowe, William R., Bond Eau, Ont.; Sallade, James W., Reading, Penn.; Shimer, Allan S., Shimersville, Penn.; Sine, Merritt W., Stirling, Ont.; Smith, James F., Port Ryerse, Ont.; Stallman, Jacob, Rochester, N. Y.; Stewart, John G., Brantford, Ont.; Stewart, Robert W., Mt. Victory, Ohio; Simpson, George W., Mackinaw City, Mich.; Thompson, Albert E., Strathroy, Ont.; Thompson, Joseph B., New York; Van Zant, Henry, Mongola, Ont.; Whitney, Jonathan C., Allan, Michigan; Wight, Willard E., Millbury, Ohio; Schoonmaker, J. H. New York.

Prize and Honour List—Seniors.

Pathology.—Silver medal, McLean, C. C.; second prize, James, H. F.; third, Adair, H.B. Honours—Blank, Blackall, Carter, Dunn, James, V. G., Jopling, Newton, Plank, Sallade, Sine, Stimpson, Smith, Thompson, A., Van Zant.

Anatomy.—Silver medal, James H. F.; second prize, McLean, C. C.; third, Adair, H. B., and Newton, J., (equal). Honours—Dunn, James, V. L., Jeffery, Jones, Jopling, Kerr, Plank, Sallade, Thompson, Wight, A.

Entozoa.—Prize, Newton, J. Honours—Cartier, Dunn, James, H. F., Jopling, Blank, Sallade, Stimpson, Thompson, A.

Microscopy.—Prize, Dunn. Honours—Dickenson, James, V. L., Queen.

Chemistry.—First prize, Jopling; second, Newton; third, Dickenson. Honours—Armstrong, Adair, Bowen, Dunn, McLean, Sallade, Stimpson, Thompson, A., Wight.

Physiology.—First prize, James, H. F.; second, Sallade; third, Dunn. Honours—Adair, Blackall, Blank, Courtenay, Fisher, Jopling, McLean, Newton, Plank, Sine, Thompson, A., Wight.

Anatomical Preparation.—Silver medal, Adair; second prize, James, V. L.

Materia Medica.—First prize, James, H. F.; second, Sallade; third, Sine. Honours—Adair, Dunn, Dickenson, James, V. L., McLean, Newton, Smith.

Breeding and Management of Stock.—First prize, Jopling, 20 dols. in books (by Hon. Commissioner of Agriculture); second prize, James, H. F., 15 dols. in books, (Council of Agricultural and Arts Association); third prize, Adair, 10 dols. in books (by Agricultural and Arts Association).

Gold medal for best general examination, presented by the Ontario Veterinary Medical Association, James, H. F. Honours—Adair, James, V. L., Jopling, McLean, Sallade.

Prizes and Honour List—Juniors.

Anatomy.—Silver medal, Tiffany, L. C.; second prize, Reed, J. F.; third, Butler, G. W. Honours—Blank, G. G., Courtenay, E., Harthill, A., Hewitt, F., Ormsby, J. T., Reed, H. G., Sutcliffe, J., Steemburg, E. A., Wilson, John, Wilson, James, Waldron, H.

Pathology.—First prize, Reed, J. F.; second, Tiffany, L. C.; third, Butless, G. W. Honours—Blank, Courtenay, Cruickshank, Eisenmuir, Graham, Harthill, Hewitt, Kincaid, Livingstone, McArthur, Mason, Ormsby, Parker,

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Reed, Shaw, Stork, Steenburg, Sutcliffe, Tenant, Waldron, Wilson, Jas., Wilson, John.

Chemistry.—First prize, Silverthorne ; second, Ardiel.

Physiology.—First prize, Reed, H. G. ; second, Reed, J. H. ; third, Berry W. F. Honours—Butler, Kincaid, G. W., McArthur, W. R., Tiffany, L. C., Wilson, James, Wilson, John, Waldron, H.

The Lieutenant-Governor, having been thanked by the President for presenting some of the prizes, and for his presence among them, was requested to make a few observations, when he said to the President and gentlemen that it gave him much pleasure as Lieutenant-Governor of the province to show by his presence there his appreciation of the Ontario Veterinary College. Judging from all that he had at times heard of it, the high status its graduates had attained, both in Canada and in the United States, the increasing number of its students, greater this year than ever before, this College, in his opinion, well deserved any compliment that the Lieutenant-Governor, as a representative man, could by his presence pay to it. He congratulated the fortunate possessors of the respective prizes, but told them that promising and suggestive of success in after-life though these prizes were, they should not run away with the idea that their future advancement was to-day secured. More experience of life would teach them that if they wished to obtain that success which their worthy President had won, they must, like him, have a knowledge of men as well as of animals, cultivate that courtesy, energy, and judgment in business matters which he had displayed, and which had done so much to place this College and himself in the highly creditable position they now occupied. The veterinary knowledge they were now acquiring was specially useful in Canada, which was the happy and prosperous home of hundreds of thousands of farmers, who, by the increased attention they were now giving to the raising of the best breeds of horses and cattle, were opening up a good field for the profitable employment of those he saw before him. The time was not far distant when, thanks to this College, its President and professors, the reliable and well-educated veterinary practitioner would take the place in this country of the unreliable and dangerous quack. He wished the College and its students every prospect, some of whom were, no doubt, leaving it for the last time this term, but he hoped they would not soon forget the useful knowledge acquired within its walls. (Applause.)

After remarks from the Mayor, the proceedings terminated.

NEW MEMBERS OF THE PROFESSION.

AT the several meetings of the Scottish Section of the Court of Examiners of the Royal College of Veterinary Surgeons, held in Edinburgh and Glasgow, on the 18th, 19th, 20th, 21st, 23rd, and 24th April, 1883, the following students passed their " Final Examination," and received the diploma.

Edinburgh Old College.

Mr. John Beattie	... ...	Longside, Aberdeenshire.
„ Tom King ...	... ...	Ayr, Ayrshire.
„ Henry Holroyd	... ...	Blackburn, Lancashire.
„ Thos. Cunningham	...	Dunedin, Otago, New Zealand.
„ Henry A. Fulham ...	...	Rhyne, Co. Longford, Ireland.
„ *K. I. Urquhart	... ...	Newton-le-Willows, Lancashire.
„ Bernard Valentine Martin		Knightstown, Navan, Ireland.
„ Arthur New	... ...	Ampthill, Bedfordshire.

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Mr. Chas. Scott Smart ...	Musselburgh.
„ Harrie Malcolm Maxwell...	Orton, Waterville, Peterborough.
„ Alex. Adam Waugh ...	Newmarket, Cambridgeshire.
„ Martin Aloysius Brown ...	Wexford, Ireland.
„ I. Rowland Dykes... ...	Wellingborough, Northants.
„ William Hackett	Pointoy, Folkingham, Lincolnshire.
„ Geo. Wm. McArthur ...	Meerut, India.
„ Christopher Jones... ...	Mallow, Co. Cork.

Edinburgh New College.

Mr. Matthew Horace Hayes ...	Junr. Army and Navy Club, St. James' Street, S.W.
„ Anthony McCarmick ...	Leeds.
„ Arthur A. Stringer ...	Belfast, Ireland.
„ Arthur Plant	Bakewell, Derbyshire.
„ Harry Young	Brighton.
„ Alex. B. Forsyth	Galashiels.
„ William Malcolm Lyon ...	Ayr.
„ David Hamilton	Maybole, Ayrshire.
„ Richard Bolster	Tralee, Ireland.
„ Frederick Percy Carter ...	Bradford, Yorkshire.
„ Robert Ion Hickes ...	Stockton-on-Tees.
„ William H. Wood... ...	Middleton, Manchester.
„ John A. Meredith	Carnbroll, Llanymynech, Montgomery.
„ Colin Gresty	Tattenhall, Cheshire.
„ William Richard Davis ...	Douglas, Isle of Man.
„ John Airth	Arbroath.
„ *Bernard Austin Clancy ...	Dublin.
„ Abraham Edward Hanson	Norwood Green, near Halifax.

Glasgow College.

Mr. Job Mugh Johnson ...	Belfast, Ireland.
„ James Spalding	Myriside, Blairgowrie.
„ Alexander Brown	Neilston.
„ Thos. Freene Sherwood ...	Belfast, Ireland.
„ John Reid	Townhead, Beith, Ayrshire.
„ Alexander Brown	Holytown, Lanarkshire.
„ John Baxter	Overtown, Lanarkshire.
„ John Holland	Dublin
„ Henry Tweedley	Barrhead.
„ John Francis Hayes ...	Portroe, Co. Tipperary, Ireland.
„ Tom Marriott	Shrewley, near Warwick.
„ James Laithwood	Congleton, Cheshire.

The following students passed their "Second Examination" on 11th, 12th, 13th, 16th, and 17th April, 1883:—

Edinburgh Old College.

Mr. C. McEachran.	Mr. Henry Barrett.
„ W. R. Davison.	„ B. O. Meek.
„ H. C. Fergusson.	„ *G. Ellison.
„ A. S. Kershaw.	„ Joseph Barclay.
„ F. Airey.	„ James Player.
„ *W. Jeeves.	„ R. C. Irving.
„ W. Kent.	„ James Jeeves.

Mr. C. Ladds.
„ F. Ashley.
„ R. Miller.
„ R. O. Stewart.
„ W. F. Doyle.
„ Alexander Wood.

Mr. F. Bennett.
„ *John Nicholson.
„ Thos. Butcher.
„ *Charles Cowie.
„ A. W. Barnes.

Edinburgh New College.

Mr. *M. Carroll.
„ A. F. Durkie.
„ *T. A. Rudkin.
„ C. Dyson.
„ J. Richardson.
„ J. T. Crosby.
„ *J. Borthwick.
„ J. J. Ridley.
„ W. Berry.
„ *W. Lothian.
„ S. W. Martin.
„ Jas. Purdy.
„ *A. Lennox.

Mr. A. Gledhill.
„ Jas. Purdy.
„ D. Charnock.
„ R. Brizell.
„ Jos. Forgham.
„ J. Malone.
„ D. Lyons.
„ Jas. Hanbury.
„ J. Dixon.
„ A. Spruce.
„ *A. Conisbee.
„ A. E. Haslam.

Glasgow College.

Mr. Alexander Paton.
„ *W. Griff. Jones.
„ James Hart.
„ Alexander Reid.
„ *Andrew Stewart.
„ Robert Yates.
„ Alexander Murdoch.
„ *Robert D. Dove.
„ *Finlay Kerr.
„ *William McDonald.
„ A. W. Mackeand.

Mr. Andrew A. Leckie.
„ Samuel M. McConechy.
„ *Archibald Edgar.
„ Richard H. Gilmore.
„ John Steel.
„ *Robert J. Huston.
„ Jas. K. Calderhood.
„ Robert Anderson.
„ Alexander Cairns Forbes.
„ William C. M. Smith.

The following students passed their "First Examination" on 25th April, 1883:—

Edinburgh New College.

Mr. *R. Rimmer
„ A. Barrow.
„ E. J. Lawson.
„ *H. Wilkinson.
„ W. Allan.
„ C. Aggis.

Mr. D. Keyes.
„ A. McArthur
„ A. Watson
„ A. Chamberlain
„ S. Chambers.

Edinburgh Old College.

Mr. James Neaves.
„ A. E. Paley.

Mr. D. Graham.
„ G. G. McLaran.

Glasgow College.

Mr. Joseph Ward.
„ Alexander Marshall.

Mr. William Ward.

* Marked thus passed with Great Credit.
† Marked thus passed with Very Great Credit

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Obituary.

THE deaths are reported of T. Burrell, Senr., M.R.C.V.S., London; F. Atkinson, M.R.C.V.S., Wolverston; J. Roberts, M.R.C.V.S., Chipping-Sodbury; G. Scully, M.R.C.V.S., St. Louis, America; R. G. Walters, Newport, Salop; D. Paley, F.R.C.V.S., Dublin; and J. Findlay, M.R.C.V.S., Army Veterinary Department, who died from the effects of active service in the Transvaal, while attached to the Inniskilling Dragoons.

We have also to record the demise of G. Bodington, M.R.C.V.S., who was at one time a member of Council of the Royal College, and was chiefly concerned in organizing the first Veterinary Congress held in this country. The *South Wales Daily News* of April 9th has the following kindly notice of his death:—

"Few persons were so widely known and more generally respected in the Vale of Glamorgan than the late Mr. George Bodington. From Neath to Cardiff, and from Merthyr to the Bristol Channel, he was known by and knew almost every resident. He came to Cardiff from Birmingham, of which place he was a native, in 1857, and from that time to 1879 there were few markets, fairs, or agricultural meetings at Cardiff, Cowbridge, Bridgend, and other places at which he was not present. He was a member of the Cowbridge Farmers' Club, to which he contributed many valuable papers. He was consulting veterinary surgeon to the Glamorganshire Agricultural Society for many years. He graduated as a member of the Royal College of Veterinary Surgeons in 1846, and was elected a member of Council in 1867, and continued to hold the position until 1871. He resided in Canton for many years, and was for a long time a member of the Canton Local Board of Health. When Canton was amalgamated with Cardiff, in 1875, Mr. Bodington was elected a member of the Cardiff Town Council, and continued to represent Canton until 1879, when he left the district. Before leaving he was invited to a complimentary dinner at Cardiff, which was attended by a large number of the chief farmers, landowners, and others in the neighbourhood, when a handsome illuminated address was presented to him, with other tokens indicating the respect in which he was held. He removed from Cardiff to Blackwater, Hants, where he died a few days since. He was buried at Hawley Church, and his remains were followed by a large number of the residents of Blackwater."

Veterinary science has sustained a serious loss in the death of Dr. Franciscus Müller, Professor at the Veterinary Institute, Vienna, who recently died at the age of sixty years. Among the many works which have issued from his pen, the best known, perhaps, is his "Anatomy of the Domesticated Animals." He contributed largely to the Austrian *Quarterly Journal of Veterinary Science*, of which he was, in conjunction with Professor Dr. Foster, editor. He was a Councillor of State, and Chevalier of the Order of Francis Joseph; he was also an Honorary Foreign Associate of the Royal College of Veterinary Surgeons.

Army Veterinary Department.

Gazette, April 21.

Veterinary Surgeon H. A. Woodroffe has resigned his commission.

Gazette, May 2.

Veterinary Surgeon, First Class, R. W. Murray, retires with the honorary rank of Inspecting Veterinary Surgeon.

Gazette, May 23.

Veterinary Surgeon, First Class, J. W. Callow, retires with the honorary rank of Inspecting Veterinary Surgeon.

Another great improvement in the position of the army veterinary surgeon has taken place, thanks to the exertions of Mr. Collins, Principal Veterinary Surgeon to the forces. By Royal Warrant, just issued, Inspecting Veterinary Surgeons are now to have the relative rank of Lieutenant-Colonel, instead of Major, as heretofore; and a veterinary surgeon shall be promoted to the rank of First Class Veterinary Surgeon on completing ten years' service (instead of twelve, as heretofore), of which at least three years shall have been abroad, provided he be recommended for promotion by the Principal Veterinary Surgeon; while a First Class Veterinary Surgeon, after ten years' service as such, shall have the relative rank of Major. The Warrant is to take effect from April 1st.

This is a valuable concession, and was much required. We feel sure that the members of the Department will appreciate it at its full value.

Notes and News.

VETERINARY RECOMPENSES.—On April 2nd, the French Academy of Sciences, at its annual public meeting, awarded the usual prizes. Among those to whom these were awarded, we find our French colleagues occupying a prominent position. M. Toussaint has obtained the Vaillant prize, of the value of 4,000 francs, in recognition of the importance of his investigations into inoculation as a prophylactic measure in contagious diseases. The interest of the Breant prize, equal to 5,000 francs, was awarded to MM. Arloing, Cornevin, and Thomas, for their researches into inoculation as a prophylactic against Symptomatic Anthrax. M. Megnin obtained 1,500 as a prize for his work on parasites and the parasitic diseases of man and domesticated and wild animals.

MEDICAL INSTINCT.—The familiar old precept, "Go to the ant, thou sluggard," has received a new and altogether unexpected application at the hands of M. Delaunay, who, in a paper read before the Biological Society, maintains that in matters of medicine and sanitation, as well as in habits of industry, the lords of creation might with advantage take lessons from ants as well as from cats and dogs. "Warrior-ants have regularly organised ambulances," and no animal is guilty of tolerating the abominations of the cesspool. In rearing their young there are few mammals which could not give a lesson to the fashionable mother of the period, and in diet and in medicine the Faculty might do well to sit at the feet of the so-called brute creation. Every one knows that animals take purgatives and emetics when the need arises, but, according to M. Delaunay, they also deserve the credit of discovering the water-cure. He says:—A dog on being stung in the muzzle by a viper was observed to plunge its head repeatedly for several days into running water. This animal eventually recovered. A sporting dog was run over by a carriage. During three weeks in winter it remained lying in a brook, where its food was taken to it; the animal recovered. A terrier dog hurt its right eye; it remained lying under a counter, avoiding light and heat, although habitually it kept close to the fire. It adopted a general treatment, rest, and abstinence from food. Another case is that of a cat which had the singular fortitude to remain for forty-eight hours under a jet of cold water. On the whole, the Royal College of Physicians, or some similar body, might do worse than establish a special department for the scientific study of the hygiene and the therapeutics of the animal world.

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Correspondence, etc.

MEMBERS OF COUNCIL.

DEAR SIR,—Permit me, through the medium of your valuable Journal, to cordially thank my professional brethren for again electing me to the Council of the Royal College of Veterinary Surgeons.

In soliciting their support, I made known my opinions regarding the more important topics relating to the welfare of our profession, and conclude, from the number of votes recorded in my favour, that those views were approved by a considerable portion of our ranks.

In again thanking my friends, believe me I appreciate the honour of my re-election as one of the highest a lover of his profession can aspire to.—Very truly yours,

Worsley, *May 14th.* W. WHITTLE.

THE MAY MEETINGS OF THE VETERINARY PROFESSION.

SIR,—Kindly permit me to make a few remarks on the annual meetings of the Royal College of Veterinary Surgeons and of the National Veterinary Association of Great Britain and Ireland.

Members of these bodies come from all parts of the country to take part in these meetings, and very many do so at great expense and much personal inconvenience. Now the meeting of the Royal College of Veterinary Surgeons lasts a little over three hours, yet we see members who will speak for fifteen, twenty, or twenty-five minutes! Surely it is most unreasonable for one individual to be allowed to occupy nearly a sixth part of the whole time of the meeting. A moment's consideration will show how annoying this selfish monopoly of time must be to those who have come, whether great or short distances, not to listen to long, prosy discourses, but for the purpose of hearing opinions which cannot be obtained elsewhere. Common-place and lecture-like addresses are entirely out of order in annual assemblies.

The meeting of the National Veterinary Association was, we may say, rendered far less instructive than it might have been, by this deplorable tendency to verbosity. The ten minutes limit of time for each speaker should be strictly adhered to, and to it there should be no exception, not even for the introducer of a subject. There should be a bell on the President's table, and when the time allotted to each speaker has expired it should be struck on the instant, and he should at once cease.

There is one injudicious rule in the regulations of the National Veterinary Association, and it is that the ten minutes may be exceeded by permission of the President. This opens the door to all kinds of irregularities as to time, and should therefore be expunged. Had it not existed, I and others would have risen on a point of order as soon as any speaker had exceeded by even a few seconds his allotted time; but he might then have appealed to the President, and so have placed the latter in an awkward position; hence no extension should be permitted. But should a speaker be given more than ten minutes by permission of the President? Certainly not. Few will deny that anything new that any speaker has to offer, with which to take up the time of an annual meeting, can be well and fully said in ten minutes, or in much less, or he must have a very roundabout way of expressing his ideas. They who on these occasions speak for more than ten minutes are looked upon by eight-ninths of their audience as bores.

What is the result of allowing any trespass on or violation of the ten minutes limit? The consequence is that members who have come long distances have to listen to long and dreary discourses, and then when they wish to express their views find that the hour for closing the meeting has arrived.

Ten minutes is not a sufficient time for a lecture, but it is more than enough for the expression of the opinions of any individual at our annual meetings, and, if the number of members desiring to speak is large, should be cut down to five; for we attend for the purpose of hearing new and salient facts, placed before us in a concise and simple manner, so that we may all return to our usual avocations wiser, if not better men. All should have a chance to speak, for we want the opinions of many minds, to obtain which is the very aim and object of our annual meetings.

Another important point is that no member should be allowed to speak more than once on the same subject, until all others who wish have done so once.

I beg to offer the foregoing views for the consideration of those who have the direction of our annual and other veterinary meetings, as they embody what is a subject of constant and very general complaint.

Your obedient servant,
VIGILANS.

SIR,—I trust that next year some rule may be adopted for the better control of speakers at the annual meeting. It is most annoying that some gentlemen who pose as fault-finders, and think themselves clever at this, should be allowed so much time in talking what the great majority of the meeting consider nonsense. One speaker, whom I should be sorry to think was in any way representative of the profession, must have occupied nearly an hour in the indulgence of wild, abusive, and even blasphemous language, and on being reminded by the President of the value of time persisted more strongly in his disagreeable, even disgraceful discourse. The President should have been better supported in putting such a rabid, contumacious speaker down. The subsequent vote of the meeting showed that all the time had been wasted, and that those who thought with him were in a minority, as usual.

The meeting, in my opinion, should have taken serious notice of the conduct of those members of Council who, when they find themselves in a minority at the Council-table, endeavour to thwart the wishes of the profession by disloyal action outside. I hope the Council will discover who instigated the Highland and Agricultural Society and the Town Council of Edinburgh to so grossly insult the entire body of the profession.

There are some other matters to which I should like to refer, but must leave them for another opportunity.

Yours truly,
May 12th. A COUNTRY PRACTITIONER.

THE NATIONAL VETERINARY ASSOCIATION.

SIR,—Feelings of confidence and gratification were experienced when you were announced as first President of the National Veterinary Association, because your earnestness is always enlisted on behalf of the advancement of the veterinary profession.

Through this Association much good should come to the profession, from

inducing its members to think upon the subjects determined upon for discussion, and to improve their knowledge of them. But, from the publicity and size of the meeting, there must be another benefit effected: the public and the sister profession must now be aware that our profession is one capable of handling the subtle questions of pathology as applied to the domesticated animals, and is therefore erudite and scientific.

The idea formulated under Section 2 of Rule II. of the Association, and relating to publication, must also materially assist this great end; and that the recognition of the members of the veterinary profession as scientific and educated men must follow is beyond all doubt, provided that the Council of the Association takes care to publish to the eyes of the world only such parts of the "information pertaining to the Association" as may seem to them to be expressed in fairly good English, and free from elephantine and unintelligible construction.

Just at this time, when so much attention is being attracted to the profession by your strenuous efforts, sir, to raise its professional importance and dignity, great should be the anxiety to prevent any ill-conceived effort being put forward under the ægis of a National Association, as a sample of our education and science.

It was a great gain that the papers submitted for discussion should be taken as read: to one of them it was an act of courtesy, for it is doubtful whether its perspicuity would have been increased by any attempt to read it.

With a style of diction pedantic and cumbersome, one, if possessed of ordinary patience, may deal; but if wedded to this style of expression there be a series of grammatical mistakes, and these occurring in a paper to be produced before a National Association, serious thoughts must arise as to the care that should be exercised in the selection of suitable and competent writers, and to the necessity of guarding against the acceptance of volunteers prepared to write on *any* subject.

It is an unenvied task to neglect the scientific aspect of a subject, and descend to the undignified position of critic of the language in which that subject is expressed; but unless healthy and fair criticism be brought to bear upon such productions of our profession, already travelling quite as fast as its feeble limbs can carry it, ridicule will be our portion, and ignorance, unchecked, will hold a sway inimical to our genuine advancement.

On first attempting to read the paper on "Human and Bovine Tuberculosis; its Communicability," I felt that the title itself was not one that left nothing to be desired; but in the second paragraph my difficulties increased, and I read the string of words commencing, "Modern research having its applicability to disease," etc., etc., and terminating at the full stop after "era," several times. There is evidently a subject to the sentence, viz., "research," but research as far as the next full stop failed to discover a predicate to complete the sense, so I passed on unsatisfied, and attempted to grasp the writer's meaning of the following clause as applied to "Tuberculosis in the human subject:" "For propagation it possesses genetic elements, which act solely and specifically on certain lines *mapped out* for *it;*" but my endeavour failed.

My difficulties were increased when I read, "If it *is* true [I presume the writer means, "If it *be* true"], and there seems to be doubt of it, that it is due to a micro-organism, having in its constitution special features, peculiar to its class, and just as potent as the bacillus of putrefaction or of *Anthracis* [why the Latin genitive case?], we are confronted with an *element of danger which our forefathers would have regarded as symbolic of lunacy* on the part of those who entertained these views." My weak intelligence stumbled over "an element of danger, which our forefathers would have regarded as symbolic

of lunacy." I suppose the writer meant that to hold such views regarding the existence of an element of danger would have been to our forefathers a symbol of lunacy, but he certainly makes "an element of danger" "symbolic of lunacy." We are accustomed to assume that "a little knowledge is a dangerous thing," and therefore contains the elements of danger: may it not be, after this, *somewhat* "symbolic of lunacy"? Perhaps my logic is imperfect. I will leave the problem.

On page 3 I arrived at the fact that "each one possesses [the verb is in the singular number, and correct] similar features in construction, and *are* [why is this verb in the plural when the subject is the same as to the previous verb, which is correct?] mainly," etc. etc.

I found, also, the following somewhat deficient: "and the *attempt to* a morphological identity between the two—*i.e.*, human and bovine—is now engaging serious attention." In the second paragraph on page 4 "if there *is*" occurs instead of "if there *be*;" and while grasping at "encapsul*ate*" and "experiment*ation*" my mind wandered to the idea that the "house that Jack built" would perhaps in the immediate future be recognised as the "architectural structure erected by the individual whose baptismal and sponsorial appellation was John."

"Sputa," a substantive, the *plural* of "sputum," is followed by its predicate "*was* selected," in the *singular* number, on the same page near the bottom.

But now I came upon the *solution* of a difficulty. At the bottom of page 4 occur the words, "it was *suspended* in *solution*." The experimenters who effected this should surely not be "aspirants to fame" in vain. I fear, however, that their brains must have been, in the language of our essayist, "highly *taut* and imaginative." If a material be suspended in a fluid it is not dissolved; but if it be dissolved, *i.e.*, in a state of solution, then the material is not suspended.

I was surprised to find on page 5 that because Professors Walley and Williams "had also placed the subject before us in a lucid manner," there is "very little to be added to their contributions to veterinary literature." This is rather a sweeping assertion to make: it sounds like the school-boy's "Shut up." Perhaps I am doing the writer an injustice: he may have meant "on this particular subject," but he did not say so.

I need scarcely trespass any more upon your space in giving evidence in support of my previous statements, unless it were to draw your attention to "*diathetic tendency;*" "soil prepared for *germs* to *hatch;*" a certainly novel discovery in anatomy, viz., "the *vacant space* in the *thorax*," and the assertion that "a *percentage* of animals *become*," etc.

I trust, sir, that you will see that these criticisms are such as the paper, prepared deliberately for publication, demands, especially as it is the first on our list of productions at the National Veterinary Association's meeting, and should be one that ought thoroughly to support our claim to be an educated body, and to commend itself to all educated men as worthy of that body.—Yours faithfully,

CHARLES SHEATHER.

[We believe the paper alluded to was hurriedly written and sent to the printer without correction. The President of the Association did not see it until it was issued for distribution.]

SIR,—Will you kindly allow me, through your columns, to ask those gentlemen who paid their subscriptions to the above Association at the meeting, *and have not received a receipt for the same*, to inform me of it at once, as we fear there are one or two we have omitted to acknowledge.—Yours faithfully,

Downing Street, Cambridge. G. A. BANHAM.

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PROFESSIONAL FEES.

SIR,—Will you kindly inform me in your next issue (and doubtless the information will be valuable to many others) to what sum a qualified veterinary surgeon is legally entitled for attendance and giving evidence before magistrates in petty or quarter sessions, before county-court judges, and before Her Majesty's judges of assize?

As for myself, personally, I have been paid all sorts of sums, and have never yet been able to learn whether there is a fixed tariff or not. Possibly there is no such thing; but, if not, I think there can be no doubt that it would be better for all concerned if it were clearly defined by some authority how much a veterinary surgeon could legally claim as his fee, under the conditions I have stated.

Yours faithfully,

Shrewsbury, *April 30th*, 1883. W. E. LITT.

[The scale at present authorized by law for attendance before the examining justices is—

To prosecutors or witnesses, being members of the profession of law or medicine, resident in the city or place where the examination is held, or within two miles of the place, for attending to give *professional evidence*, and not otherwise, a sum not exceeding for each attendance ... ... 10s. 6d.

If residing elsewhere ... ... 21s. 0d.

And for mileage, not exceeding 3d. per mile each way.

This scale applies, we believe, to all legal cases. But the veterinary surgeon, unless subpœnaed, may make his own terms for giving evidence.]

PROFESSIONAL HUMBUG.

SIR,—If the communication from Mr. Harold Leeney, in the VETERINARY JOURNAL for May, is not overdrawn, a very wretched state of things exists in the veterinary profession; indeed, if the curtain were properly lifted, some of our "grave and reverend seigniors" ought to be in gaol, not to put too fine a point on it. I produce a circular* sent me yesterday by some enterprising printers in London. This "gentleman" (?) evidently is ready, as he says, for any emergency. Modesty, however, is not in him a strong point. Instead of the "College arms," a brazen head would be singularly appropriate.

* P—— L——,

M.R.C.V.S., London; & H.F.V.M.A., Edinburgh,

VETERINARY SURGEON,

Begs most respectfully to inform the Nobility, Gentry, Farmers, and others of the surrounding districts, that he is now practising the Veterinary art in all its branches at the above address, and having had over twenty years' experience in the profession, hopes by strict attention to business, combined with moderate charges, to merit a share of your patronage and support.

N.B.—Winner of Prize in 1862, *for the best Essay on all difficult cases of Calving, its sequels, and diseases resulting therefrom.*

ALL KINDS OF OPERATIONS SKILFULLY AND SCIENTIFICALLY PERFORMED.

Medicines, etc., of all descriptions prepared from the best Drugs, and always ready to meet any case of emergency for Horses, Cattle, Sheep, Dogs, etc.

Horses Examined as to Soundness.

Here is a label of a less pretentious type, but quite unlike what would be expected from a scientific profession.

RESTORATIVE CORDIALS FOR SHEEP AND LAMBS.

MILK ABSORBENTS.

FROM

A. W. B——, M.R.C.V.S.L.

VETERINARY INFIRMARY.

HORSES EXAMINED.

OPERATIONS CAREFULLY PERFORMED.

As to Mr. Leeney's idea of our relinquishing forges, in town it would be simply impossible. We cannot stir far without a smith, that worthy being indispensable in so many of our cases. In improving the veterinary profession we are beginning at the wrong end by so much cant and claptrap. Let every member of a Veterinary Medical Association pledge himself to certain simple rules, as, for instance—

1st. To promise to solicit no professional brother's clients.

2nd. To give up bribing coachmen, ostlers, and the "horrid set generally" with which our profession is unfortunately surrounded.

3rd. To engage no smiths from another practitioner's forge without first consulting brother practitioner.

Remember that life is too short for a lot of professional rivalry and dodging to get practice. The better feeling there is between neighbouring practitioners, the better the public will be served. I should like to see the day come when veterinary surgeons were unanimous on one thing: to stick up for their rights, and to work with a will together.

EAST ANGLIA.

DISGRACEFUL ADVERTISING.

DEAR SIR,—The annexed advertisement appeared in the *Sportsman* of the 28th March. The power of the Council of the R.C.V.S. to remove veterinary surgeons' names from the register for misconduct has not, up to the present time, done much good in protecting the title of M.R.C.V.S., seeing it can be abused with impunity in so many ways.—Yours faithfully,

"VERAX."

A VETERINARY SURGEON (M.R.C.V.S.) desires an ENGAGEMENT as STUD GROOM over any description of Horses. 'Large experience. Excellent testimonials as to character, ability, etc. Apply to V.S., Post Office, Boroughbridge, Yorkshire.

SIR,—I annex an advertisement cut from the *Sportsman* of March 28th, which, perhaps, you may think it advisable to expose in your Journal. Officers have often been reduced to driving cabs, but I think the advertiser in this case might have sunk his profession for his own sake, if not for others. I should like to see veterinary surgeons give up the practice of advertising entirely. It does them no good, and the profession a great deal of harm. The advertisements in the Irish paper, *Sport*, are really too tradesmen-like, and quite the reverse of professional.—Yours, etc., INDIGNANS.

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NEWSPAPER REPORTING.

SIR,—I enclose you a cutting from the *Scientific American*, which shows the danger of admitting the public so far into one's confidence as to permit them to witness operations. I feel certain that Dr. Liautard would not for a moment countenance such professional advertising, which is alike in bad taste, discreditable to the profession, and a mean advantage for any reporter to take.

"*Surgical Operation for Filaria.*

"A surgical operation on the eye of a large dray-horse which had been afflicted for some time with a worm in one of its eyes was performed at the American Veterinary College, on the 9th inst., in the presence of some fifty students.

"A reporter on one of our daily papers (New York *Sun*) thus describes the operation :—

"The hind legs of the horse were tied after he had been led to the middle of the room, the floor of which was covered with straw. His fore legs were similarly treated. The hind and fore legs were then drawn together, and the horse fell on his left side. A sponge with a little ether on it was put against his nostrils.

"The Professor of Ophthalmotology, assisted by Dr. Liautard and several other veterinary surgeons, stood near the horse's head. When, after a struggle of a few minutes, the horse became unconscious the Pro'essor produced a case of delicate steel instruments. The students held their breath. The Professor knelt near the head of the animal. With a keen-edged knife he made an incison in the opalescent cornea of the right eye, where the little white 'snake' twisted and contorted. The parasite did not accept the invitation to come out. The incision was enlarged by the use of a pair of curved scissors ; but the snake preferred its native element to the untried world on which the door was opened to it.

"Meantime a half-dozen students were pressing the body of the horse with their hands and knees, in undulatory unison, to keep up respiration.

"The Professor next resorted to a little instrument called Bowman's spoon. He stroked the cornea of the eye until the head of the parasite peered out. A pair of minute forceps closed upon its neck, and out came the snake, and a moment later was squirming in innumerable curves on a plate.

"The students crowded around the plate. They saw a thin white worm, about two and a half inches long, 'of wire-like hardness, and,' according to the Professor, 'with a well-marked head.' Dr. Liautard put it in a bottle.

"Then a large force of students set to work to assist in restoring the horse by artificial respiration. They worked industriously for an hour. When the undulatory pressure on the body of the horse failed to arouse him, an intravenous injection of ammonia was tried. It did not work. The horse was then bled. He did not revive.

"'He's dead,' Dr. Liautard said. 'Evidently there was something the matter with his heart. We will hold a *post-mortem*.'"

Yours truly,

FILARIA.

THE TREATMENT OF PARTURIENT APOPLEXY.

DEAR SIR,—I have adopted the following treatment in a large number of cases of Milk Fever, and have found it most satisfactory.

When fortunate enough to see the animal in the first stage of the complaint, I bleed freely and give Magnes. Sulphatis sixteen ounces, and Oleum Crotonis in twenty-five drops, with aromatics; I have cold water constantly poured upon the head, and order the cow to be frequently milked. I also ascertain whether the urinary bladder has acted naturally; if not, I use the catheter.

In the second stage, I blister severely at back of the poll, pass the catheter twice daily, and give Oleum Terebinth two ounces, and Spts. Ammon. Comp, one ounce, very carefully, every two hours.

When we consider that these animals are really converted into mere milking machines, and that the supply of blood which was required for the fœtus from the mother, is suddenly rendered unnecessary by the birth of the calf, it is not difficult to understand that it is rational treatment to administer a strong purgative prior to calving, and I have found the above cathartic drench very useful.—I am, sir, yours respectfully,

ROBERT J. DAWSON, M.R.C.V.S.

25, Telford Road, Walthamstow, *May 19th.*

A CASE FOR CHARITY.

DEAR SIR,—Would you allow me to trespass on the space for your June issue of the VETERINARY JOURNAL, regarding the case for charity mentioned, and so kindly brought before the profession in your last month's Journal, by Professor Walley, of the Royal Veterinary College, Edinburgh. The case is that of the late Robert Hall, M.R.C.V.S., late of Stockton-on-Tees, Durham, and the appeal is for the widow and five children, who were on April 30th still in the workhouse at Stockton-on-Tees. The case of the late Robert Hall is a very sad one, and to be candid with the profession, I am afraid his troubles were largely brought about by departing from a strictly sober line of life, though this may have been due to anxiety and worry brought about by an exhausting Chancery suit in which he had been long engaged. I knew little of the doings of my departed college friend until last October, when I saw from a north-country paper that he was in trouble. I then sent him a little assistance. Through this circumstance, Mrs. Hall wrote me from the workhouse, informing me of her husband's death and her destitute position, asking my assistance and advice in obtaining a situation for herself, and of getting her children into some charitable institution. Finding from Mrs. Hall that her late husband had belonged during his life to none of those numerous grand friendly bodies that many of us, no doubt, do belong to, and not being able to render her any assistance in some of those, I advised her to write to Professor Walley, and ask him to place her case before the veterinary profession. Therefore, sir, I beg to supplement the kindness of Professor Walley, by appealing especially to those members of the profession who will remember their fellow-student Robert Hall, at Clyde Street, in the sessions 1862, '3, and '4; they will remember him—a sober, gentlemanly, industrious student, and I can only hope that Professor Walley's appeal to the general body will be kindly received, and that some help may be rendered to the widow and five children. I do not know the age of the eldest, but should think she is about nine years old. I see from Mrs. Hall's last letter to me on April 30th, that the eldest has been elected to the "Bennburgh Castle School" for girls in Northumberland, and Sir Joseph

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Whitwell Pease would have nominated one of the boys to the Haverstock Hill School, but one of the rules of that institution, Sir Joseph W. Pease finds, excludes the boy, through his being in the workhouse.

I am, dear sir,

Your obedient servant,

THOMAS BARKER, M.R.C.V.S.

26, Beaumont Street,
Portland Place,
May 20th, 1883.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from J. T. Duncan, Toronto; W. O. Williams, Edinburgh; Arnold and Sons, London; J. McCall, Glasgow; W. E. Litt, Shrewsbury; "Verax"; R. R. Cole, Hinckley; J. B. Martin, Rochester; "East Anglia"; W. Caudwell, Worksop; C. Sheather, London; A. Broad, London; W. Whittle, Worsley; "Filaria"; R. J. Dawson, Walthamstow; T. Barker, London; A. W. Hill, London.

BOOKS AND PAMPHLETS: *E. Cuyer*, Les Allures du Cheval; *P. Adam*, Vorträge über Pferdekunde; *W. Osler, M.D.*, On Canadian Fresh-water Polyzoa; On Certain Parasites in the Blood of the Frog; *L. Schwab*, Katechismus der Hufbeschlagkunst; Transactions of the Epidemiological Society of London; Report of the Minister of Agriculture for the Dominion of Canada.

JOURNALS, ETC: *Der Thierarzt; Stock-Keeper; Der Hufschmied; Annales de Méd. Vétérinaire; Wochenschrift für Thierheilkunde und Viehzucht; Revue Vétérinaire; Recueil de Méd. Vétérinaire; Live Stock Journal; Archives Vétérinaire; Lancet; American Live Stock Journal; Echo Vétérinaire; Journal of the Royal Agricultural Society; Journal de Méd. Vétérinaire et de Zootechnie; Mark Lane Express; British Medical Journal; Bulletin et Mémoires de la Soc. cent. de Méd. Vétérinaire; La Clinica Veterinaria; American Veterinary Review; Journal of the Society of Kings County; Edinburgh Medical Journal; Medical Press and Circular; Journal of the Society of Arts.*

NEWSPAPERS: *Irish Times; Grantham Journal; Glasgow Herald; Scotsman; Edinburgh Courant; Montreal Gazette; American Cultivator; Madras Advertiser; Berwick Warder; Berwickshire News; The Turf, Field, and Farm; Madras Times; Boston Saturday Evening Gazette; Rochdale Times; Leeds Mercury; Daily Chronicle; Edinburgh Daily Review; Bradford Times.*

TO CORRESPONDENTS.

No notice can be taken of anonymous communications. Whatever is intended for insertion must be authenticated by the name and address of the writer, not necessarily for publication, but as a guarantee of good faith. We cannot undertake to return rejected communications.

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